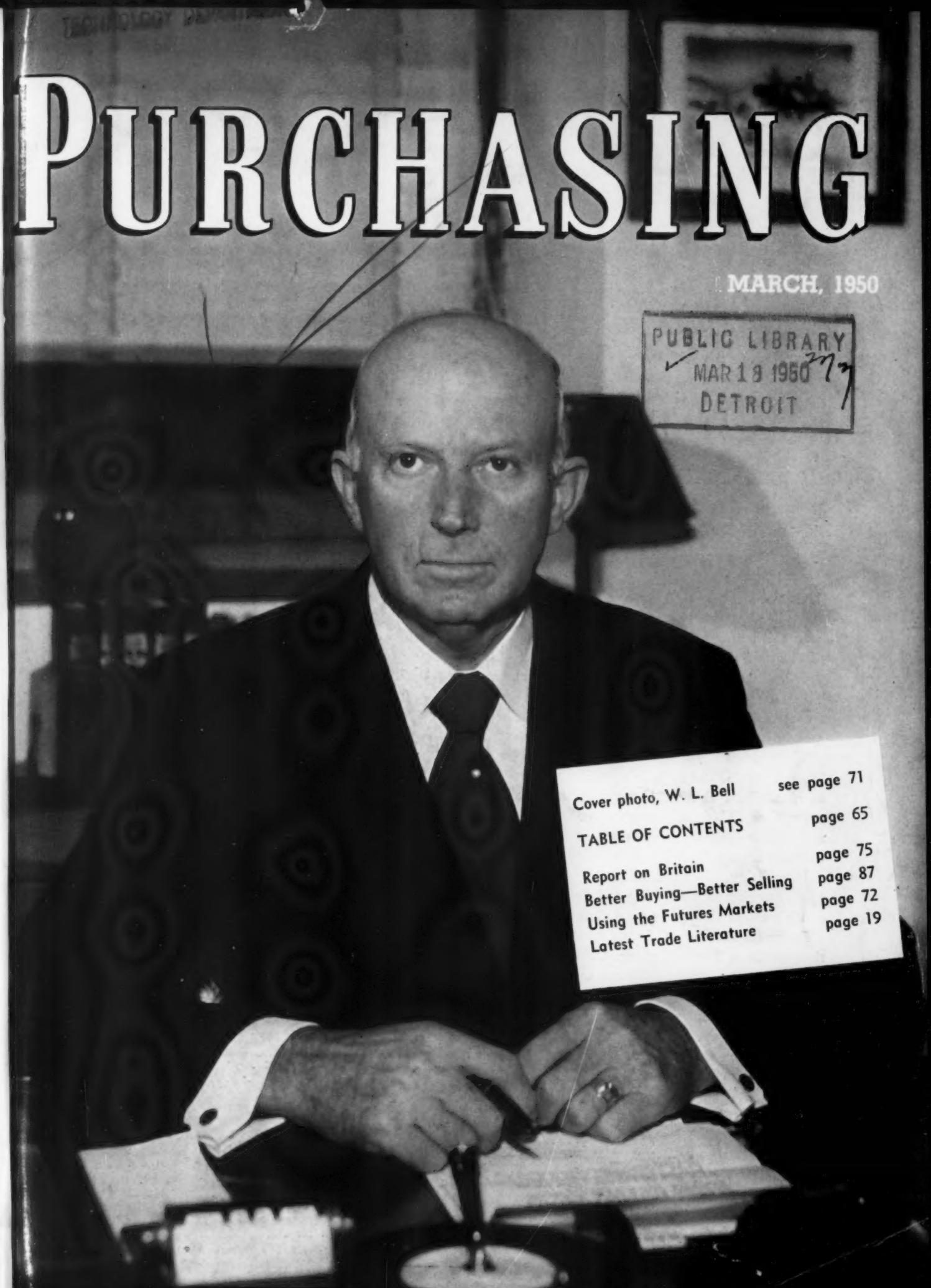
# PURCHASING

MARCH, 1950

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Cover photo, W. L. Bell — see page 71

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# FASTER GRINDING — FEWER WHEEL DRESSINGS — LOWER COSTS



## Economies gained by a New England plant* using TEXACO SOLUBLE OIL

In this spindle grinding operation, an emulsion of *Texaco Soluble Oil D* is far out-performing the previously used high-priced competitive coolant. This is shown by a comparative run in which the same number of pieces was ground with each lubricant in turn.

Throughout the test, the wheel protected by the *Texaco Soluble Oil* emulsion required no dressing at all. Wheel size and corners were adequately maintained. With the competitive coolant, wear and corner breakdown sufficient to require wheel dressing occurred before half the run was completed.

In addition, *Texaco Soluble Oil* kept the wheel open, assuring faster cutting and better finish, and considerably reduced the total time for the run.

Examples like this of lower cost machining are the rule when *Texaco Cutting, Grinding and Soluble Oils* are on the job. A Texaco Lubrication Engineer will gladly help you gain these same benefits in your plant—whatever your metal working operations. Just call the nearest of the more than 2,000 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

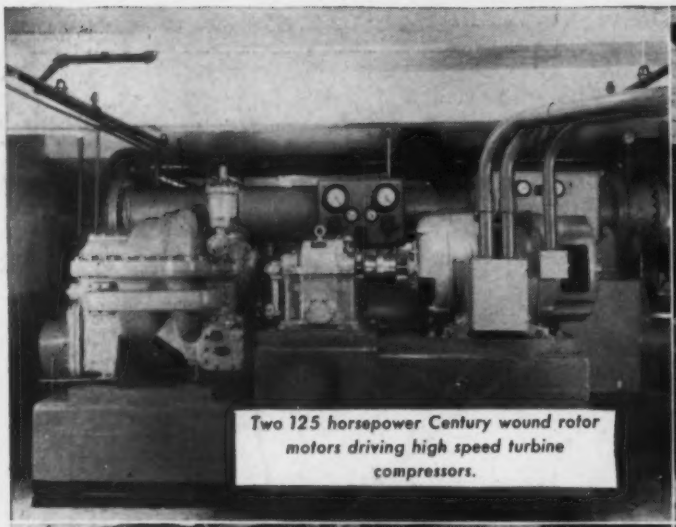
**Operation:** Grinding spindles to remove .020" stock
**Metal:** 4150 steel, hardened to 40-45 Rockwell
**Machine:** Cincinnati Filmatic, 10" cylindrical grinder
**Emulsion:** Texaco Soluble Oil D at 58:1

**Name of this Texaco user on request*

TEXACO

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Century 100 horsepower wound rotor motor driving a refrigeration compressor.



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Century wound rotor motor.

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3. *Syncro-speed, multiple drives used where two or more operations must be coordinated.*
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Century C MOTORS

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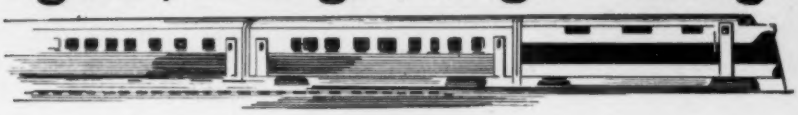
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Because its high strength-to-weight ratio permits use of lighter sections, HI-STEEL makes possible important reductions in dead-weight. Less steel is needed per unit, enabling material savings up to 25%.

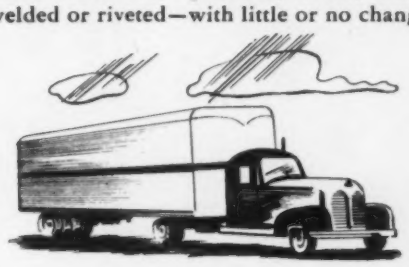
### INCREASE STRENGTH

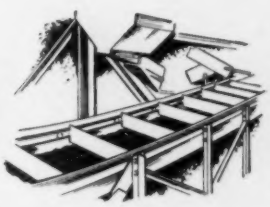
High strength, low alloy HI-STEEL has nearly twice the yield strength of ordinary structural-grade carbon steel. It is also superior in notch toughness, fatigue strength and abrasion resistance. Because of its high strength-to-weight ratio, HI-STEEL provides greater strength with the same sectional thickness.

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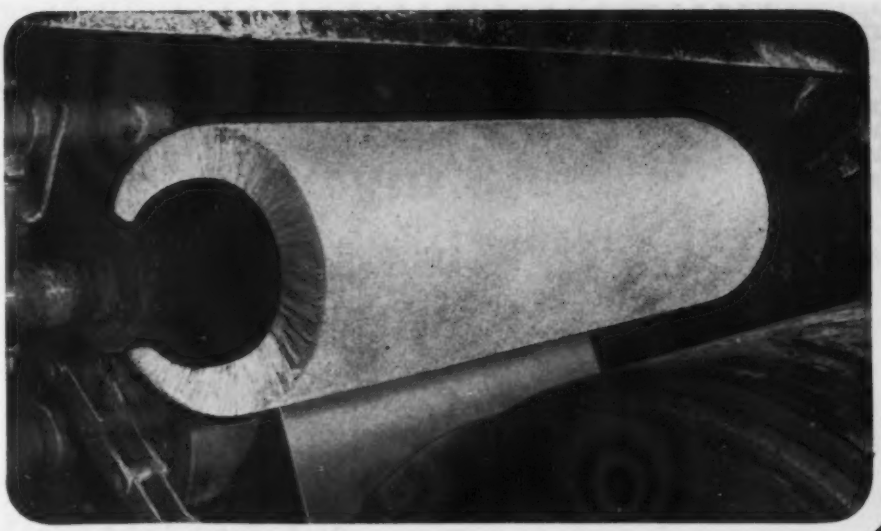
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**COMPARISON OF *AVERAGE* PROPERTIES OF HI-STEEL WITH ORDINARY STRUCTURAL GRADE CARBON STEEL**

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|---|---|---|
| Yield Point (psi) | 56,000 | 35,000 |
| Ultimate Strength (psi) | 73,000 | 66,000 |
| Elong. in 8" (%) | 25 | 25 |
| **Endurance Limit** | | |
| Fatigue Strength (psi) | 49,000 | 33,000 |
| **Impact Resistance (Charpy Impact—ft. lbs.) Temperature** | | |
| 80° F | 55 | 36 |
| 32° F | 43 | 33 |
| 0° F | 36 | 26 |
| —25° F | 34 | 6 |
| —50° F | 30 | 2 |


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GIVING
COSTS
THE

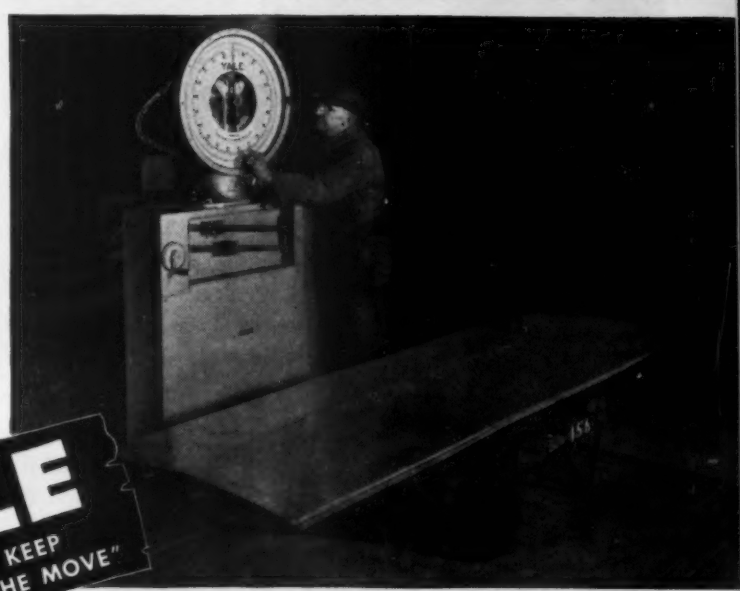
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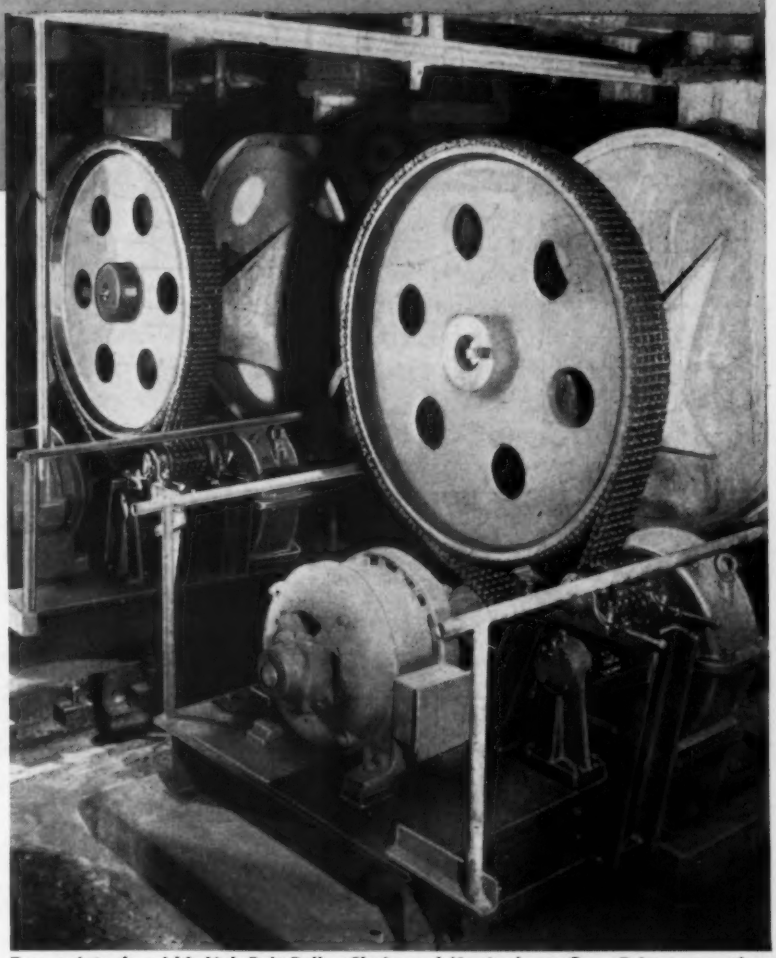
Positive transmission of power, efficient conveying, compactness, wide flexibility of arrangement, ability to absorb shock, are characteristics of roller chain which are enhanced by the precision manufacturing methods and metallurgical control followed in the huge Link-Belt chain plant.

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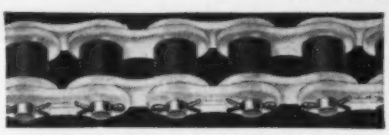
Link-Belt Precision Steel Roller Chain and sprockets are available immediately, in single or multiple widths, in ⅜" to 2½" pitch. Also with various types of attachments as well as the Universal Carrier, Flat-top, double pitch and horizontal plane bend types of chain. Made to manufacturers' (A.S.A.) standards. Send for Data Book No. 1957-A.

**LINK-BELT COMPANY**

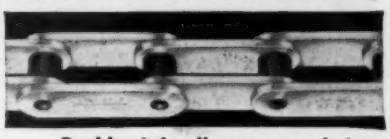
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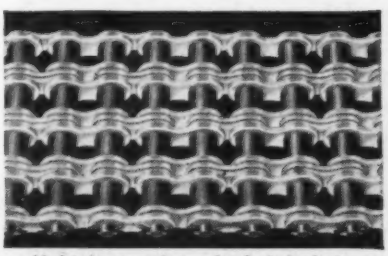
Two quintuple width Link-Belt Roller Chain and Herringbone Gear Drives operating tankage dryers. These drives eliminated noisy, troublesome arrangements of bulky gears and spur pinions.



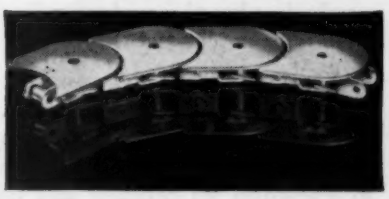
Single strand standard pitch chain.



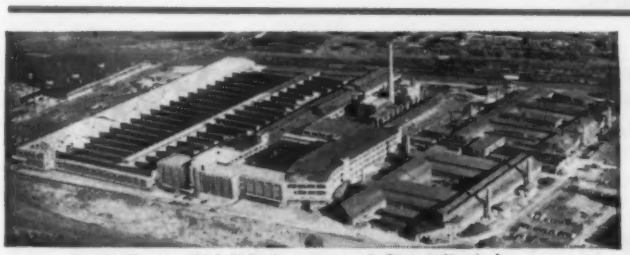
Double pitch roller conveyor chain.



Multiple strand standard pitch chain.



Universal Carrier chain, flexes in 2 planes.



Ewart Plant — Link-Belt Company — Indianapolis, Ind.

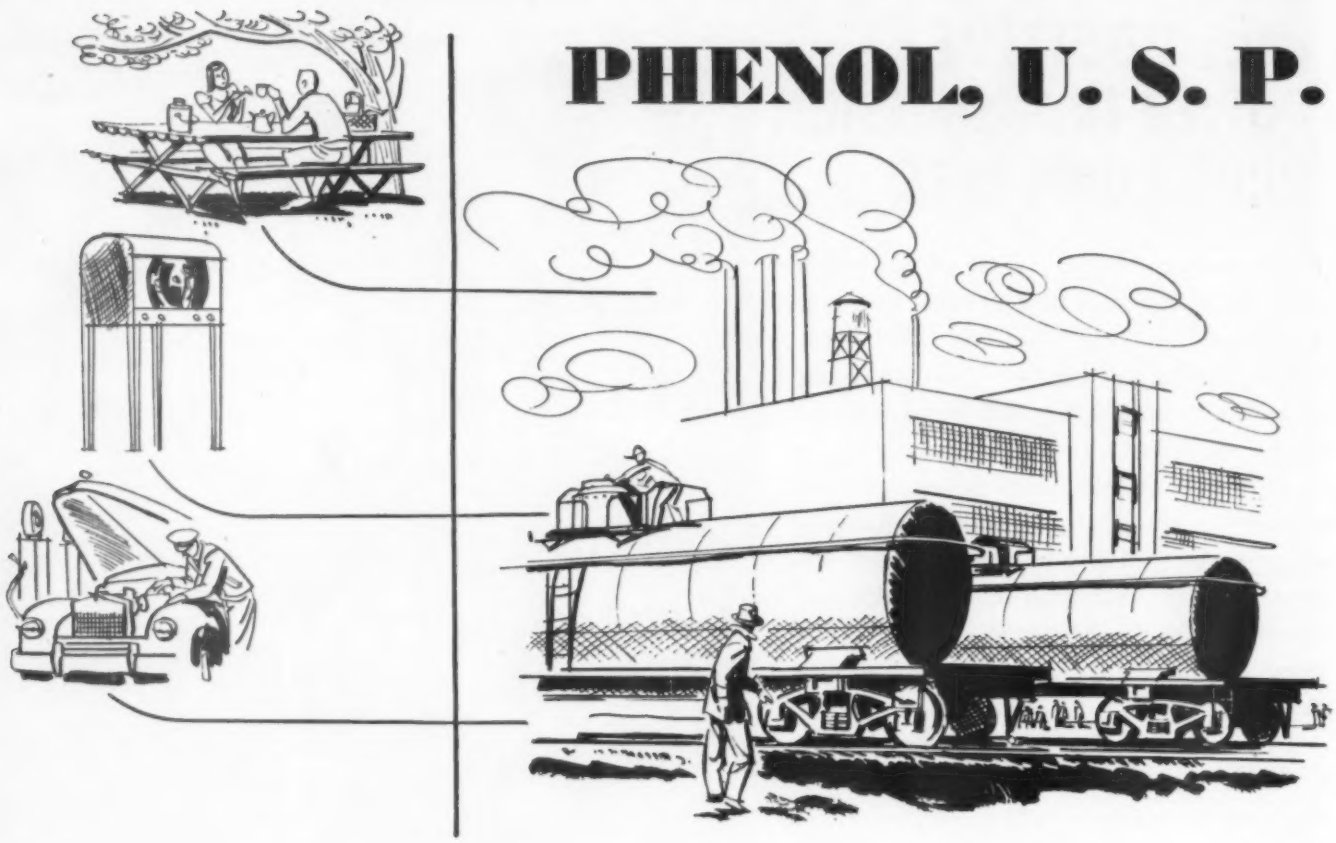
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# PURCHASING PREVIEWS

***A WASHINGTON REPORT FOR PURCHASING AGENTS***

March 1, 1950.

**"PROFITLESS PROSPERITY" ANTICIPATED**

If current business trends continue, the period ahead may duplicate the era of "profitless prosperity" of the post-World War I '20's.

That, at least, is the hope of the present political regime, whose aim is to pin up good times at a high level and to keep them there.

The circumstances that might warrant the comparison between the present and the early 1920's draw heavily on the experience of the construction industry, which established a peak year of activity in 1925. In the years that followed, the number of housing units constructed was scaled down sharply.

The construction record of 1925 went unchallenged until 1948, when the number of housing units constructed came close to the previous record. A new record in the number of housing units built was established last year.

On the basis of prewar market demand, a sharp decline could be anticipated. In terms of the number of housing units available, the construction industry has just about caught up with demand---in some communities, has exceeded demand.

**GOVERNMENT SUBSIDIZES CONSTRUCTION**

Instead of looking for a drop, the construction industry looks forward to the year ahead as another banner year. The feeling is that the Administration has put enough props into the economy to stimulate improvement in existing housing.

Normal market for housing is based on the rate of new family formations---roughly 400,000 a year. The 1948 rate of construction more than doubled this figure, and last year more than a million housing units were constructed.

Now, with construction caught up, the number of housing units built could well drop back to the 400,000 level. However, the aim is to replace existing housing---especially for low and "middle income" families.

For the low income families, the Government has worked out a rental subsidy plan, under which Government funds are used to make up the difference between what a low income family can afford to pay in rentals and the sum required to amortize construction costs.

The Administration program now calls for a "middle income" housing program, which would enable families in the average income brackets to purchase homes through the simple expedient of reducing mortgage interest rates to somewhere around 3%, through a system of Government guarantees.

**PROPS STIMULATE INDUSTRY**

Aim is to keep certain key industries at a high level of activity through use of Government props, with the result that other industries will be carried along.

Rate of housing construction reflects on the whole range of home appliances, stoves, refrigerators, furniture, furnishings---in addition to building materials, roofing, building hardware, etc.

Similarly, new construction creates a demand for new streets, sewers, water supply, utilities. With the Government footing the rent or interest bill, there is no immediate demand for reduction in cost of materials or for scaling down of wages of labor.

**"FAIR DEAL" UNCERTAINTIES**

There is some parallel between the supports suggested for construction and those which have been applied in agriculture. Presumably similar supports might be injected into other industries.

This is the essence of the "Fair Deal" program---a creeping approach toward the socialized state.

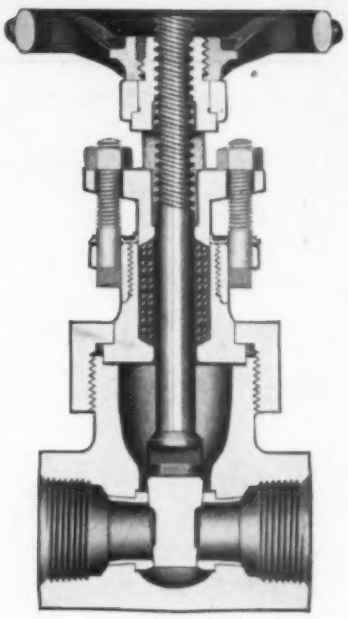
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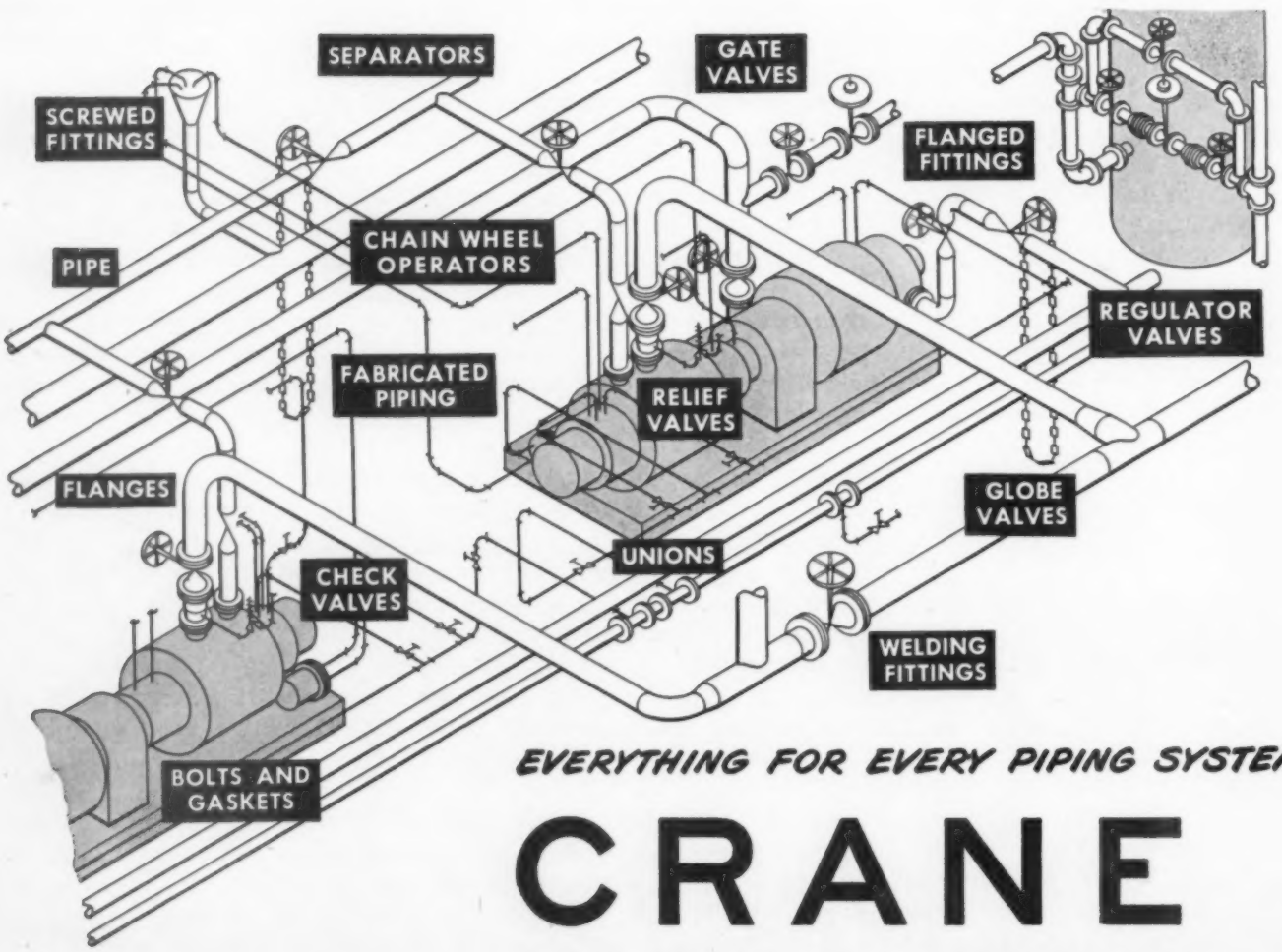
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As to the effects of the proposed program---the "Fair Deal" contemplates no sharp drop in prices, stabilization of wages at the currently high level, with further increases in the hourly wage rates when earned through increase in productivity---and above all, "cheap money".

Much of the cycle toward a socialized state is uncharted. How far the Administration plans in that direction will carry is speculative.

Until some bench marks of experience are established, there is a greater need for caution.

Purchasing agents have shown an awareness of this need. This is especially reflected in inventory policy, with PAs shying away from speculative accumulation of inventory---nevertheless maintaining a sufficient level to permit a large volume of sales.

**PROFIT MARGINS SQUEEZED**

If the program to keep the economy rolling at a high level is successful, there is likely to be a sharp scaling down of business profit. The cost of Government subsidies and guarantees will reflect in higher taxes.

Competition will tend to drive prices down at the consumer level, and the whole program is aimed at keeping wages high, which reduces the margin of profit. Result will be that while in one year an industry may show a large profit yield---as did the automotive industry last year---this yield will be sharply reduced as the market becomes more competitive.

**UNEMPLOYMENT PROBLEM LOOMING**

A jarring note in the expectation of business prosperity is the fairly sizeable number of unemployed. Currently, about 3,500,000 people are unemployed, and this number will increase substantially to a point where in June or July the total may reach as high as 5,000,000.

The problem is intensified by the fact that unemployment is concentrated in particular areas, and has become a major problem in some communities.

Thirty-three industrial production centers have a very substantial labor surplus, with unemployment at 12% or more of the total labor force in the community.

Many of the communities are small, but there are a number of large production centers in New England which have considerable unemployment.

As yet, the unemployment problem is considered of a local nature, and the major effort on the part of the Federal Government has been to stimulate community programs to provide jobs. State and municipal "full employment committees" have been organized, and surveys have been made by local groups of the economic potential of their various communities. The committees have made efforts to attract new industries and have tried to get Government contracts for plants located in their areas.

In some cases, these efforts have been effective, but not to a point where the national unemployment totals have been whittled down substantially.

**"SMALL BUSINESS" FAVORED**

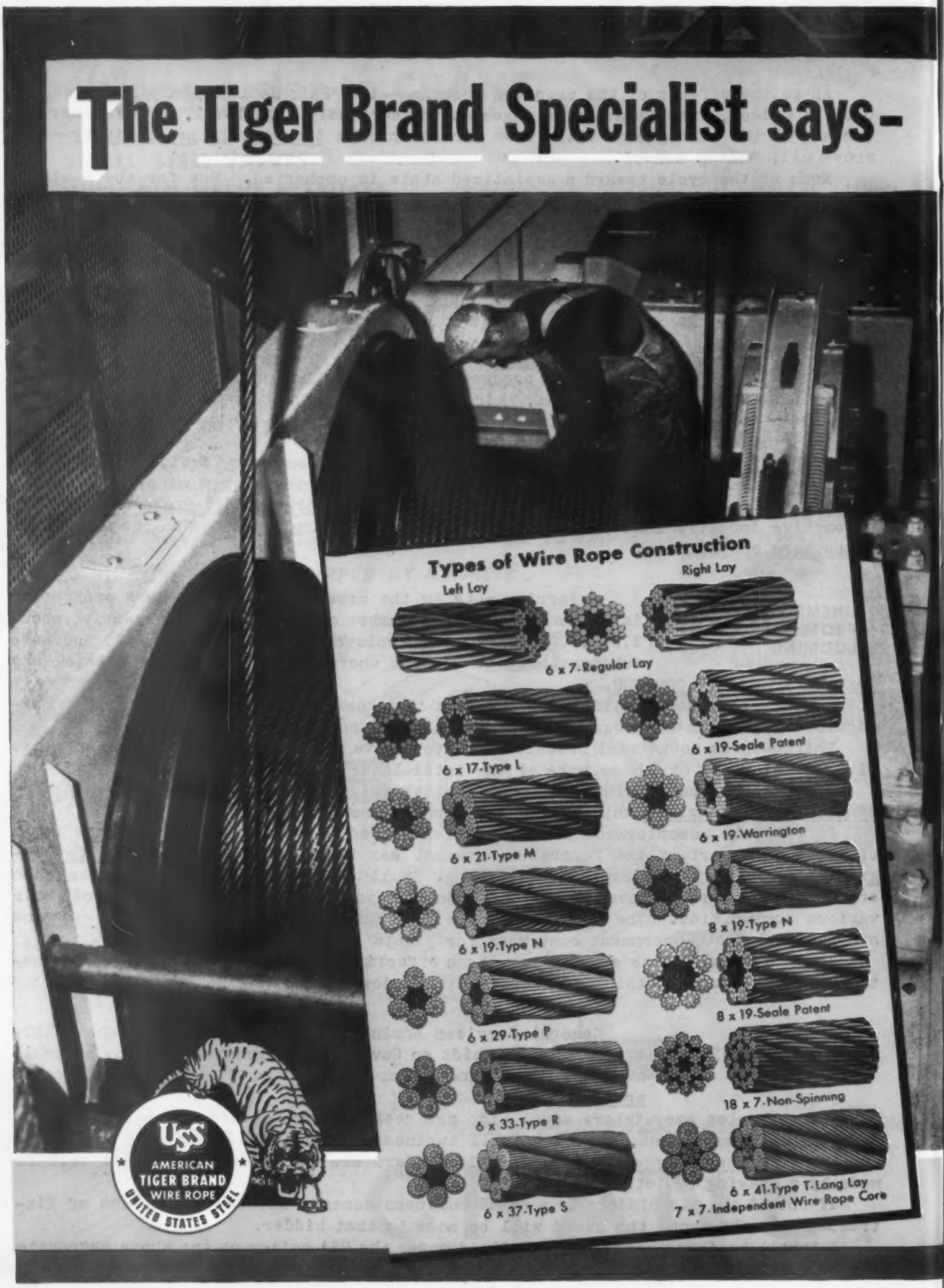
General Services Administration has announced the policy of deciding tie bids on Government purchases in favor of small business firms and firms located in distressed employment areas.

The new rules are: "where equal bids are received from an area where there is no distressed unemployment, one by a small business concern, the award will be made to the small business bidder. Where the tie bidders are all small, the award will be made by a drawing by lot."

If one of the tie bidders is a small business concern located in an area of distressed unemployment, the award will be made to that bidder.

A "small business concern" is defined under the GSA policy as one whose aggregate number of employees is less than 500.

# The Tiger Brand Specialist says-



# "Here's what you should know about wire rope —and how to select, use and care for it."

THE three most important qualities that wire rope must possess are (1) strength, (2) fatigue resistance, and (3) abrasion resistance. Whether the rope is used on hoists, cranes, excavators, conveyors, loaders or unloaders, these properties are required in varying degrees depending on serivce requirements.

**STRENGTH**—This is determined by size, grade, and construction. Wire for wire rope can be made in any desired tensile strength ranging from iron grade at approximately 100,000 lbs. per sq. in. to improved plow steel grade at approximately 250,000 lbs. per sq. in. The knack of making Tiger Brand Ropes with uniform strength throughout shows the skill of the wire rope manufacturer.

**FATIGUE RESISTANCE**—The ability to make wire that will stand thousands of bends over drums and sheaves without breaking is no small accomplishment. The wire must be made with just the right amount of toughness and ductility. Tiger Brand Wire Rope is made from wire especially fabricated for wire rope use. Ropes composed of a large number of small wires will have higher fatigue resistance than those made with a smaller number of large wires.

**ABRASION RESISTANCE**—This is determined by the size and chemistry of the wires, especially the outer wires as they are exposed to the most wear. Obviously, the larger the wire size the greater the resistance to abrasion. Furthermore, the high strength steels are better able to withstand wear because of a greater carbon content. This means that improved plow steel ropes would have the highest abrasion resistance.

## Getting the right balance

Individually, the properties of strength, fatigue resistance, and abrasion resistance are not difficult to obtain . . . but in wire rope making, it is impossible to accent one property without detriment to the other two. That's why the skill and experience of the men who make Tiger Brand Wire Rope are so important. Satisfactory performance demands that running ropes possess all three properties and therefore it is necessary to obtain an effective balance which meets the requirements of your particular job.

## How to get longer wire rope life

Don't overload the rope.

Don't subject the rope to sudden impact loads.

Don't use undersize sheaves and drums—this is the commonest cause of fatigue breaks.

If vibration is present, make regular cuts from the end of the rope so as to change the dampened section.

Keep groove diameters proper size so as to avoid pinching of rope.

Avoid flange wear as a result of bad sheave alignment.

If grooves become fluted, it is usually a sign that the sheaves should be replaced with a harder material.

Lubricate regularly. Wire rope is a machine and requires adequate lubrication. It must also be protected from corrosion to retain strength.

Avoid kinking, improperly attached fittings, and uneven drum winding.

## Make use of the Tiger Brand Wire Rope Specialist

It is very much to your advantage and to ours to maintain good operating practices. Call in the Tiger Brand Specialist at regular intervals and have him give you a FREE Check-up. He is thoroughly experienced in proper wire rope application.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA STEEL COMPANY, SAN FRANCISCO
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL EXPORT COMPANY, NEW YORK




***Send for FREE BOOKLET***

American Steel & Wire Company
Rockefeller Building, Dept. G-30
Cleveland 13, Ohio

Please send me a copy of your catalog, "American Tiger Brand Wire Rope."

Name.....

Company.....

Position.....

Address.....

City.....State.....

USS

**AMERICAN TIGER BRAND WIRE ROPE**

*Excellay Preformed*

UNITED STATES STEEL



*Want Additional Product Information? See Page 19.*

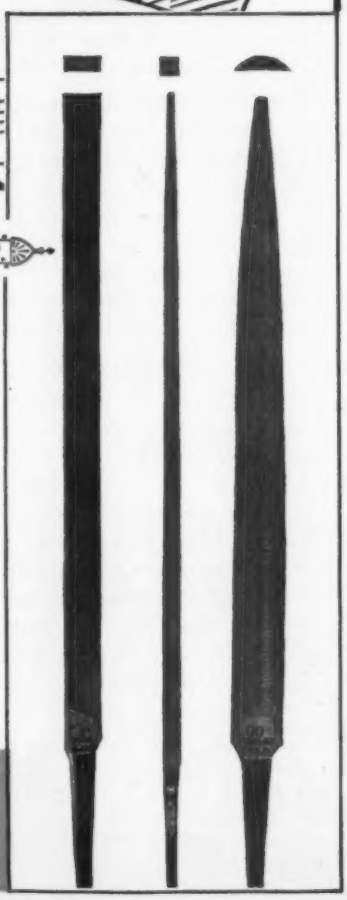
# POP'S school of filing




LIKE most production-wise foremen, Pop is a bug on tools. He knows that Nicholson X. F. (Extra Fine) Swiss Pattern Files, for example, are the finest finishing files you can buy. And heaven help the man who uses 'em on the wrong jobs!

Nicholson Swiss Pattern Files are widely used for removing burs left from previous machining operations, rounding out slots, smoothing small parts, and final finishing on all sorts of delicate and intricate pieces. They come in seven degrees of coarseness, scores of shapes and sizes. Available through your industrial distributor.

Send for the Nicholson booklets, **"Ten Special File Types"** and **"File Filosophy."** They're FREE.



NICHOLSON U.S.A. **NICHOLSON FILE CO. • 28 ACORN STREET, PROVIDENCE 1, R. I.** BLACK DIAMOND TRADE MARK

*(In Canada, Port Hope, Ont.)*

**NICHOLSON** *. . . a file for every purpose*

# —Modernize—

# YOUR CATALOG AND BULLETIN FILES

**Bring Your Source Information Up-to-date on New and Improved Equipment, Products and Materials. This is the first of— FIVE Pages Listing the Latest Trade Literature! Check All Five—19, 20, 22, 24, and 26!**

**When Writing to Manufacturers Direct, Please Mention PURCHASING Magazine.**

☐ **1. ROTARY RECORD FILES**—Combined catalog and price list featuring Rotary Record files which use ordinary card records on any grade of paper without punching or any other special preparation, has just been issued by the Herring-Hall-Marvin Safe Co., Hamilton, Ohio.

☐ **2. FITTINGS, FLANGES**—Catalog 484 details welding fittings and forged steel flanges, and tells about their plus-value features. Taylor Forge & Pipe Works, P.O. Box 485. Chicago, Ill. Eastern Plant, Carnegie, Pa.; Western Plant, Fontana, Calif.

☐ **3. INSTRUMENT TRANSFORMERS**—12-page booklet, B-4319, describes construction features of the complete Westinghouse line of instrument transformers. A two-page table with illustrations show typical shapes, construction and application. Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa.

☐ **4. ROSSLYN METAL** — "Rosslyn Metal for Heat Resisting Application" tells about this clad material consisting of a copper core, metallurgically bonded on both sides to stainless steel or Iconel. It is said to have a higher thermal conductivity than any other commercially available heat resisting material. American Cladmetals Co., P. O. Box 544, Carnegie, Pa.

☐ **5. CLUTCH COUPLING** — Bulletin T-649 describes ready-to-use clutch coupling that is suitable for various shaft sizes and adjustable for various h-p needs. It accommodates any shaft from ¾" to 1¾" dia. (in 1/16" increments) with standard keys. Centric Clutch Co., 22-26 South Ave. West, Cranford, N. J.

☐ **6. HEAT EXCHANGERS**—Everclean Paracoils, heat exchangers that are automatically cleaned at predetermined intervals, are described in Bulletin 190. Davis Engineering Corp., 1064 E. Grand St., Elizabeth, N. J.

☐ **7. VENETIAN BLINDS — SPRING TEMPERED** slats that will not dent or crumple, and vinyl plastic tape which will not fade, is unaffected by weather conditions, and which is stretch-, shrink- and soil-proof—are described in printed matter available from Hunter Douglas Corporation, 150 Broadway, New York, N. Y. Slats and tape available in diversified colors.

☐ **8. MANOMETERS** — Bulletin M-101 describes King Manometers, low reservoir and raised reservoir types. These are high precision pressure measuring U-Tube instruments of the fixed reservoir type. They are made in 14 lengths with scales from 12" to 116" long for use on line pressures up to 200 psi. King Engineering Corp., Box 100, Ann Arbor, Mich.

☐ **9. POLISHING, GRINDING** — Metalite Cloth Belts for the belt backstand method of polishing and grinding, and Lightning Metalite Cloth belts and contact wheels for contour polishing, are subject of new bulletin which explains how they cut costs. Behr Manning Corp., Troy, N. Y.

☐ **10. RUST PREVENTION** — Circular tells about S.R.P. coating which is said to stop corrosive action inside and out, and prevent rusting of old or new metal surfaces. S.R.P. is durable and fume resistant, and has unusual elasticity which permits the coating to expand and contract with temperature changes. Sonneborn Sons, Inc., 80 8th Ave., New York, N. Y.

☐ **11. TRANSFORMERS** — Dry-type transformers available in wide range of sizes suitable for duty at load center is described in 8-page bulletin 61B6382A. The transformer is built in single-phase and three-phase types. They are built in sizes 1½ kva and larger single phase, and 9 kva and

*(Please turn to page 20)*

## READER SERVICE

**All listings include names and addresses of manufacturers.**

**However, each one is numbered. If you want to save Multiple-letter writing, just jot down the numbers of the items you want and month of issue, and list them in a letter on your COMPANY letterhead to**

**Reader Service Dept.**
**PURCHASING Magazine**
**205 E. 42nd St.,**
**New York 17, N. Y.**

**NOTE: This service also applies to New Products, Equipment and Supplies reported in the**

**New Products Section**
**Pages 140-162**

larger, three phase. Allis-Chalmers Mfg. Co., So. 70th St., Milwaukee, Wis.

☐ **12. VALVES**—Completely jacketed valves in solid alloy, which are made in three basic styles—Gate, Globe and Check, manufactured in compliance with the new MSS Stainless Steel Valve Standards S.P.42, are the subject of bulletin No. 3. Alloy Steel Products Co., Inc., 1312 W. Elizabeth Ave., Linden, N. J.

☐ **13. RUBBER PARTS**—"Should Your Rubber Parts Be Made by Specialists" is title of case history booklet just released by Continental Rubber Works, 1983 Liberty Boulevard, Erie, Pa.

☐ **14. CASTERS, WHEELS**—New manual gives complete information about selection of casters and wheels for maximum floor protection, economy and efficiency. Darnell Corporation Ltd. Branches in Long Beach 4, Calif., 60 Walker St., New York, and 36 No. Clinton St., Chicago.

☐ **15. TAPS**—"Finished" taps and their economy especially in handling difficult tapping operations, are described in illustrated catalog issued by the Hanson-Whitney Machine Co., Hartford 2, Conn.

☐ **16. GAGES**—Thread plug, cylindrical, reversible, thread ring and roll thread snap gages are detailed in Gage Catalog No. 1. Precision standards from design to final inspection are featured by long-wear-life. Pratt & Whitney, West Hartford 1, Conn.

☐ **17. GRINDING WHEELS**—Data book lists specific wheel recommendations from complete line of wheels in varied grades, sizes and shapes, for top results on grinding jobs. It also includes the name of distributors. Simonds Abrasive Company, Philadelphia, Pa.

☐ **18. ARC WELDING**—New Arc Welding Machine Catalog No. 8 describes Bumblebee and MCT transformer a-c arc welding machines; Hornet 36A and Wasp d-c arc welding machines, Yellow Jacket gas-engine driven arc welders, and other types and customer-assembled gas engine sets. Air Reduction Sales Co., 60 E. 42nd St., New York, N. Y.

## LATEST TRADE LITERATURE

(This is Page 20)

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☐ **19. SMALL MELT FURNACES**—Four-page catalog describes Sklenar Reverberatory Tilting Furnaces for the melting of non-ferrous metals, also iron, ferro manganese, copper ferrite and malleable iron, with capacities from 500 to 2000 lbs. Furnaces are capable of producing from 13 to 21 continuous melts per 8-hour day. Bellevue Industrial Furnace Co., 3971 Bellevue Ave., Detroit 7, Mich.

☐ **20. CRANE**—New 25 ton Diesel-Electric locomotive crane, model 825 DE is covered by Catalog 6001-8. All deck operations are accomplished by diesel power direct from engine. Travel is by electric motors mounted in each truck. Direct connected, traction type generator supplies the current. American Hoist & Derrick Co., St. Paul 1, Minn.

☐ **21. RING PACKING**—Palmetto Pisto-Ring packing is a new product designed to replace hydraulic duck and other forms of packing used in inside packed reciprocating pumps. They are molded to exact size; flexible and resilient and will not crack; and do not swell or shrink in service. Self lubricating. Bulletin TB PR 619 gives full details. Greene, Tweed & Co., North Wales, Pa.

☐ **22. INDUSTRIAL SAFETY** — Catalog, 64 pages, eye and respiratory equipment, includes digest of Federal specifications for heat-treated glass; discusses proper use of plastics; types of filter glass available; respiratory hazards and what respiratory units should be used; and selector tables showing gases and vapors prevalent in industry. Charts aid in selection. Willson Products, Inc., Reading, Pa.

☐ **23. CHUCK & SEGMENTS** — Faster, better surface grinding is claimed for Sterling Chucks and Segments. Chucks are light in weight, and segments are available in various combinations of grain, bond and structure. Bulletin gives full details and prices. The Sterling Grinding Wheel Division, Tiffin, Ohio.

☐ **24. BALL BEARINGS**—Products data sheet gives technical data and statistical tables that answer questions most frequently asked about steel balls for bearings, stainless steel balls, bronze balls, and burnishing balls and materials for tumbling barrel operations. Pioneer Steel Ball Inc., Unionville, Conn.

☐ **25. CYLINDRICAL GRINDER**—Bulletin tells about the Grindwell general purpose cylindrical grinder. Machine is suitable for manufacturing, maintenance, tool room and training purposes. Landis Tool Co., Waynesboro, Pa.

☐ **26. PLATING SOLUTIONS**—New Book entitled "Simple Methods for Analyzing Plating Solutions" is characterized as standard textbook for the electroplating industry. Hanson-Van Winkle-Munning Co., Matawan, N. J.

☐ **27. WATER HOSE** — Catalog section on its lines of water hose used in wide variety of services in industry is illustrated and describes construction of each type of water hose. B. F. Goodrich Co., Akron, Ohio.

☐ **28. LIGHTING** — Catalog, 50 covers full engineering data on fluorescent equipment in luminous-indirect and direct-indirect for both standard and Slimline lamps; also included is line of luminous indirect incandescent equipment and Red Spot hangers for enclosing globes. F. W. Wakefield Brass Co., Vermilion, Ohio.

☐ **29. EXPENDABLE PALLETS**—Power-Pack expendable fibreboard pallets which are so cheap they may be discarded after one trip, each post of which will support over 3000 lbs., are the subject of printed matter available from Addison-Semmes Corp., Dept. 190-A, Racine, Wis.

*(Please turn to page 22)*

SQUARE D's *New*

# SAFETY SWITCHES

*Types A, C and D




## Backed by 40 years' DESIGN LEADERSHIP

***The remarkable superiority of this new switch line is reflected in these TYPE A design and operating features:***

**MODERN STYLING** is both functional and attractive.

**COMPACTNESS** obtained without sacrifice of wiring convenience.

**FULL COVER INTERLOCK** has attachment that locks switch "ON" or "OFF" with 1, 2, 3 or 4 padlocks of nearly any size or shape.

**SIMPLE MECHANISM**—quick make-and-break action—no dead center.

**SILVER-PLATED** current-carrying parts.

**EXPOSED BLADES** permit visual checks of switch operation.

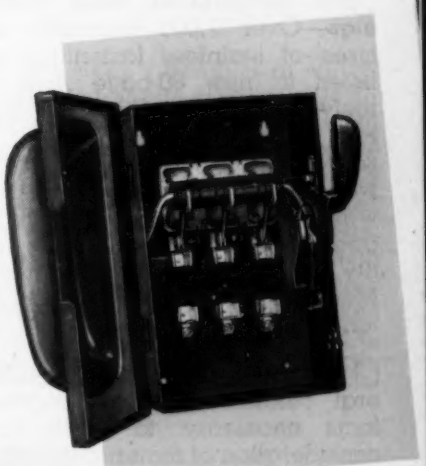
**DEAD-FRONT** line terminals are protected by hinged arc chamber cover.

**MAGNETIC ARC PLATE** adds to unusually high rupturing capacity.

**POSITIVE PRESSURE** jaws and fuse clips, steel reinforced, silver-plated.

**NON-TRACKING** insulation used in base. Melamine insulating cross-bar.

**REMOVABLE PRESSURE CONNECTORS** permit substitution of solder lugs, where preferred.



**Types C and D similar to Type A in appearance—differ in construction details*

**NOW in production: 30, 60, 100 and 200 ampere sizes**

***Write*** **for Bulletin 3100 • Square D Company, 6060 Rivard Street, Detroit 11, Michigan**

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SQUARE D COMPANY CANADA LTD., TORONTO • SQUARE D de MEXICO, S.A., MEXICO CITY, D.F.

(*Continued from page 20*)

☐ **30. COATINGS** — "Vinylite — Vinyl Butyral Resins" for coatings and adhesive materials are subject of Technical Release No. 11, 24 pages. These resins are used in the formulation of extremely successful coatings. Of particular interest is the "wash primer" type of metal conditioner which provides positive protection against corrosion on all types of metal. Bakelite Corporation, 300 Madison Ave., New York, N. Y.

☐ **31. PORTABLE TOOLS**—"How to Choose and Use Portable Tools", is title of reprint covering such factors as The Economic Approach, Fallacies in Figuring, Selecting the Right Tool, Standard and Semi-Standard Tools, Compressed Air Supply and Cost, Air Power Distribution and Selecting the Right Hose, by H. P. Bailey, president, Rotor Tool Company, 17325 Euclid Ave., Cleveland, Ohio.

☐ **32. PUNCH PRESSES** — Eight-page catalog describes large bolster area double crank punch presses of 30-tons capacity, known as Multi-Max Punch Presses. It describes actual installations, and illustrates many of the features of the press with complete specifications. Diamond Machine Tool Co., Los Angeles, Calif.

☐ **33. STAINLESS Steel Fastenings**—Over 7,000 varieties and sizes of stainless fastenings are listed in new 80-page Anti-Corrosive Reference Catalog. Separate sections are devoted to screws, nuts, caps and bolts, wood and sheet metal screws, washers, pins, nails, etc. Each page shows list prices and quantity discount chart. Anti-Corrosive Metal Products Co., Inc., Castleton-on-Hudson, New York, N. Y.

☐ **34. FORK LIFT TRUCKS**—General catalog gives all pertinent facts necessary to preliminary consideration of material handling machines. Data has been so arranged as to make comparisons between various models as simple as possible. Clark Equipment Co., Industrial Truck Divn. Battle Creek, Mich.

☐ **35. INDUSTRIAL BEARINGS**—New 1950 catalog, 84 pages includes several new motor bearings. Standard stock sizes of plain bearings and size range of bars remains the same. Every item is immediately available through 22 sales offices and warehouses. Johnson Bronze Co., 300 So. Mill St., New Castle, Pa.

## LATEST TRADE LITERATURE

(This is Page 22)

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☐ **36. LAPPING MACHINE**—New 24" Rotary Lapping machine designed to impart highly accurate and superfine finish to plane or cylindrical surfaces of small and medium sized parts, is subject of four-page bulletin. Taft-Pierce Mfg. Co., Woonsocket, R. I.

☐ **37. FLUID COUPLINGS, and TORQUE CONVERTERS** — February issue of "Lubrication" tells about the advantages of fluid couplings and torque converters for industrial equipment. Fluid couplings are in reality a clutch and torque converters serve as both a clutch and a transmission. You will find this non-technical article of much interest. The Texas Co., 135 E. 42nd St., New York, N. Y.

☐ **38. COLORED PENCILS**—Sample of Omega colored pencils made in Tryrex shape that fits the hand, and will not roll, will be sent to you by the Richard Best Pencil Co., Dept. P, Springfield, New Jersey.

☐ **39. CONTAINERS** — Folder identifies and illustrates various types and sizes of containers, and tells how samples may be easily obtained,—all fibre cans, combination metal and paper cans, spirally wound tubes and cores, etc. The Cleveland Container Co., 6201 Barberton Ave., Cleveland 2, Ohio.

☐ **40. SPRINGS, FORMED WIRE** —"Springs and Formed Wires" is title of booklet that contains valuable data about spring selection and performance. Wickwire Spencer Steel Div., C.F.&I. Corp., 2 Bond St., Worcester 6, Mass.

☐ **41. STAINLESS TUBING** — 12-page Stainless Tubing Data File contains basic information on available sizes, physical properties, corrosion resistance, etc. The Carpenter Steel Co., Alloy Tube Divn., 122 Springfield Road, Union, N. J.

☐ **42. INDUSTRIAL FENCING** — Industrial Fence Catalog shows installations and tells about chain link fence and gates for plant protection. Anchor Post Fence Divn., 6615 Eastern Ave., Baltimore 24, Md.

☐ **43. SPEED REDUCERS**—Bulletin 125 tells about new vertical gear shaft work gear speed reducers, Types NU and ND. Two smaller sizes are also available. Complete Information — construction, ratings etc. of units is given in Catalog 200. The Cleveland Worm and Gear Co., 3255 East 80th St., Cleveland 4, Ohio.

☐ **44. FASTENERS** — Wall chart showing types and sizes of cap screws, lag bolts, carriage bolts and semi-finished nuts, etc., and complete Catalog are available from The Triplex Screw Co., 5331 Grant Ave., Cleveland 5, Ohio.

☐ **45. CHAINS**—A special chain for every purpose. Five plants manufacture chain of every type and size,—described in new catalog available for the asking. The Cleveland Chain & Manufacturing Co., Cleveland 5, Ohio.

☐ **46. GLUE**—Laboratory Report covers Boxeal, a new fast setting shipping case glue which tears fibres 15 to 20 seconds after application by brush or machine. It permanently seals all types of shipping boxes. Paisley Products Inc., 1770 Canalport Ave., Chicago, Ill.

☐ **47. ABRASIVE BELTS** — New bulletin tells how Resinall Metalite cloth belts are slashing costs. Belts are resin-bonded to withstand hot, heavy-duty work. Behr-Manning, Troy, N. Y.

(*Please turn to page 24*)

Tapered Roller
TIMKEN BEARING
EQUIPPED

# The little label with the big message

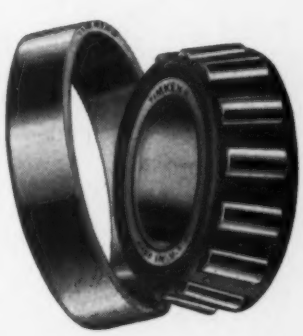
WHY do more than 1,000 manufacturers put this label on their products? Because it tells a story of *extra* value to every prospective buyer.

When a customer for your product sees the "Timken® Bearing Equipped" label, he knows he can count on dependable bearing performance. He knows that moving parts will last longer, work better, because they're held in proper alignment. He knows that friction is reduced to a minimum, maintenance and lubrication time cut. He's sure of extra years of service both in the bearings and in related assemblies.

The "Timken Bearing Equipped" label has come to mean all these things for two main reasons: the outstanding *performance* of Timken tapered roller bearings for more than 50 years; the widespread *acceptance* of Timken products throughout all industry.

If you make a product in which wheels and shafts turn, give it an extra sales feature by using Timken tapered roller bearings. And make the most of that sales feature by using the "Timken Bearing Equipped" label in advertisements, booklets, folders, and on the equipment itself. For help in making use of the "Timken Bearing Equipped" label write The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN
TRADE MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS



NOT JUST A BALL NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION

(*Continued from page 22*)

☐ **48. PILLOW BLOCK** — "SC" bulletin gives specifications for Type "SC" ball bearing pillow block for small shafts and moderate loads. Pillow blocks, flange bearings and hanger bearings available from distributors' stocks in shaft sizes ranging from ¾" to 2-7/16". Metallic-backed neoprene seals are engineered to stay put —they can't blow. Dodge Mfg. Corp., 1300 Union St., Mishawaka, Ind.

☐ **49. SLIMLINE FLUORESCENTS** —Plenty of footcandles for easy seeing and accuracy; easy maintenance, no starters, and long life. "Modernize with G-E Slimline" booklet tells the complete story. General Electric Co., Nela Park, Cleveland, O.

☐ **50. TUBING** — "Specifications for Seamless and Welded Tubular Products in Stainless, Alloy and Carbon Steels". Technical Bulletin No. 11-G, 234-page book, contains latest revisions of 48 ASTM, ASME, AAR and B&W specifications. Copy available on company letterhead request. The Babcock & Wilcox Tube Co., Beaver Falls, Pa.

☐ **51. BAGS**—"Pocket Guide to Bemis Products" (cotton, paper, burlap) is available from Bemis Bro. Bag Co., 111 N. Fourth St., St. Louis, Mo.

☐ **52. LIGHTWEIGHT Business Paper**—Free test Kit of Sea Foam Bond which makes 14 clear carbons, and comes in 7 routing colors. Brownville Paper Co., 17 Bridge St., Brownville, N. Y.

☐ **53. HACKSAW CUTTING** — Metal Cutting Booklet and Wall Chart show how to get maximum efficiency from hacksaw blades. Clemson Bros., Inc., Middletown, N. Y.

☐ **54. INDUSTRIAL TIRES**—Catalog tells about Industrial pneumatics, available in assemblies of Tires, Tubes & Wheels, OD 8" to 23", 200 to 2,000 lbs. cap. General Tire & Rubber Co., Akron, Ohio.

☐ **55. OIL CUPS. Shaft Seals** — Booklet tells how to handle lubricating and shaft sealing problems. Gits Bros. Mfg. Co., 1865 S. Kilbourne Ave., Chicago 23, Ill.

☐ **56. ARC WELDING** — Printed matter tells how P & H AC arc welders cut welding costs. Harnischfeger Corp., Milwaukee, 14, Wis.

☐ **57. CHAINS** — Catalog gives full information on complete line of chains in wide variety of types and sizes, steel or brass. Hodell Chain Co., Cleveland 3, O.

☐ **58. FORGINGS**—Forging literature describes services, facilities and production of Mesta Machine Co., Pittsburgh, Pa.

☐ **59. BABBITT**—Data book on babbitt metals is available from National Bearing Divn., American Brake Shoe Co., 4940 Manchester Ave., St. Louis 10, Mo.

☐ **60. LOCK NUTS** — Lock Nut booklet helps to select the right lock nut, giving engineering, design and weight data. National Screw & Mfg. Co., Cleveland 4, Ohio.

☐ **61. AERIAL CABLES**—52-page manual details Okoprene self-supporting aerial cables. The Okonite Co., Passaic, N. J.

☐ **62. ELECTRIC TYPEWRITER**—"Electric Typing vs. Manual Typing" booklet tells how to do more and better work in less time. Remington Rand, Dept. TE32, 315 4th Ave., New York, N. Y.

☐ **63. ENVELOPES** — Sample book of envelopes is available from Sheppard, 1 Envelope Terrace, Worcester, Mass.

☐ **64. MOTORS**—Bulletin MU-185 gives complete information on Wagner Motors. Wagner Electric Corp., 6360 Plymouth Ave., St. Louis 14, Mo.

☐ **65. FLOAT PACKAGING** — Booklet tells how "Float Packaging saves on shipping costs and reduces shipping damage. Kimberly-Clark Corp., Neenah, Wis.

☐ **66. BRONZES** — Folder gives tables of properties (hardness, tensile, fabricating, physical), and of uses and forms of phosphor bronzes. Chase Brass & Copper, Waterbury 20, Conn.

☐ **67. NEW MACHINES** — 16" Band Saw and new 12" tilting arbor saw, and other machines are described in Machine Catalog, Walker-Turner Divn., Kearney & Trecker Corp., Plainfield, N. J.

☐ **68. MOTOR CONTROLS** — "Simplified Guide to the Selection and Application of Commonly Used Types of A-C Motor Controls". Graybar Electric Co., 420 Lexington Ave., New York.

☐ **69. GUMMED TAPE** — Folder "The Mark of a Better Tape", includes sample, and tells about Orange Core gummed tape. Hudson Pulp & Paper Corp., Dept. Q-1, 505 Park Ave., New York, N. Y.

☐ **70. DUSTLESS BLENDERS** — Catalog tells about 4-way mixing action of blenders which have mixing capacities from ¼ ton to 75 tons per hour. The Sturtevant Mill Co., 107-A Clayton St., Boston, Mass.

☐ **71. CUTTING TOOLS** — Cuting tools and broaches are detailed in catalog just off the press. Continental Tool Works., Divn. Ex-Cell-O Corp., Detroit 32, Mich.

☐ **72. COLLAPSIBLE TUBES**—Catalog describes Sheffield Process Tubes made for a large variety of products, from pure tin, Sheffaloy, lead, tin coated, and aluminum, and also Vincote inner coated tubes for strongly acid or alkaline products, leakable oils, greases and other commodities. The Sheffield Tube Corp., 7024 Melrose Ave., Los Angeles, Calif.

☐ **73. BRONZE BARS**—Cored and solid "Tiger" bronze bars in all popular sizes, both rough and ma-

(*Please turn to page 26*)

**LATEST TRADE LITERATURE**

(This is Page 24)

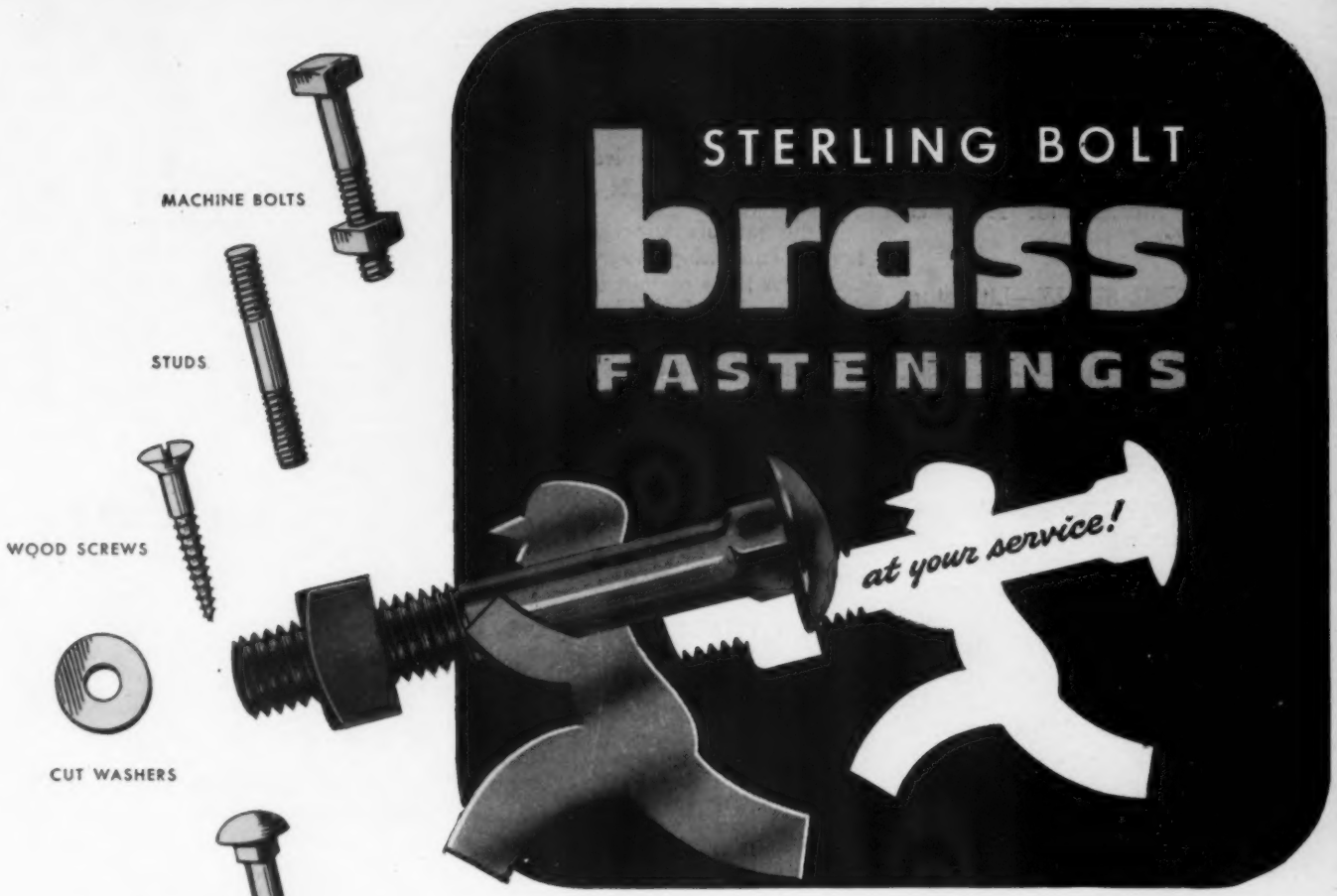
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**19, 20, 22, 24, 26**

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(*Continued from page 24*)

chined are described in 6-page bulletin listing sizes and weights, physical properties, and the many uses and advantages. National Bearing Divn., Am. Brake Shoe Co., 4930 Manchester Ave., St. Louis 10, Mo.

☐ **74. POSTAL SCALE**—Literature describes the Post-O-Meter which gives precise to-the-penny mailing cost. Thermoplastic spring compensates for temperature changes. Detecto Scales, Inc., 541P Park Ave., Brooklyn, N. Y.

☐ **75. SHIPPING BOXES**—Testing methods recommended in determining the quality of corrugated shipping boxes, are the subject of booklet "How to Test Corrugated Shipping Boxes". It lists minimum requirements established by C. F. C. Rule 41, postal and express regulations. Hinde & Dauch Paper Co., Sandusky, Ohio.

☐ **76. CHROMIUM CHEMICALS**—32-page handbook on chromium chemicals, depicting their use and diversified applications is referred to as a valuable quick-reference technical guide. 32 pages, spiral bound. Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14, Ohio.

☐ **77. VERTICAL CARTONER**—New bulletin describes the CMV constant motion vertical cartoner for cartons from 3¼" x 3¼" x 8" to ¾" x ½" x 2½". The machine enables one operator to load as many as 100 bottles, or similar one-piece loads, per minute; machine does the rest. R. A. Jones & Co., Inc., P. O. Box 485, Cincinnati, Ohio.

☐ **78. CARBIDE CUTTING TOOLS**—New catalog describes and lists side milling cutters, face mills, shell mills, end mill cutters, half side mills, keyseat cutters, fluted end mills, twist drills, etc., and variety of special tools. Nelco Tool Co., Inc., Manchester, Conn.

☐ **79. MACHINE TOOLS**—New catalog No. 1684 covers machines for milling, broaching, cutter sharpening, grinding, lapping and flame hardening. It contains new data on the large plain centertype grinding machines. Cincinnati Milling & Grinding Machines, Inc. Cincinnati 9, Ohio.

## LATEST TRADE LITERATURE

(This is Page 26)

**Check Over All Five Pages!**
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**Reader Service Department**
**PURCHASING Magazine**
**205 E. 42nd St., New York 17, N. Y.**

☐ **80. CYLINDER GRINDERS**—Catalog 1-49 illustrates and describes 12" Type CH Universal hydraulic cylindrical grinder. Its 26 pages contain 48 photos and 5 line drawings. Machine offers various advantages for small lot manufacturing, tool room work, and maintenance. Landis Tool Co., Waynesboro, Pa.

☐ **81. HARDWARE**—Hardware for metal application is subject of catalog K396. It contains all necessary data to meet specifications for manufacture of metal cabinets, lockers, metal doors, panels, switch boxes, medicine cabinets, aircraft, etc. P. & F. Corbin Divn., American Hardware Corp., New Britain, Conn.

☐ **82. HOT WORK STEEL**—B-47 Hot Work Steel, a chromium, tungsten, cobalt, vanadium steel that has excellent resistance to shock and abrasion at elevated temperatures, is detailed in new bulletin. Chart details principal tool steel grades. Allegheny Ludlum Steel Corp., Pittsburgh 22, Pa.

☐ **83. AIR FILTERS**—"A Comparative Study of Air Filtering Costs" tells about advantages offered by Dust-Stop impingement type air filters made of glass fibers, in installation and maintenance. Owens-Corning Fiberglas Corp., Dept. 70-A, Toledo 1, Ohio.

☐ **84. PACKAGING & PAPER Lacquers**—32-page basic data booklet tells about nitro-cellulose and paper lacquers, flexibility, grease resistance, scuff resistance, specular gloss, etc. heat sealing and moistureproof heat-sealing coatings, etc. It is general guide in preparing packaging and paper lacquers for specific purposes. Hercules Powder Co., Wilmington, Del.

☐ **85. HANDLING AIR**—"Progress in the Handling of Air" tells about new methods, new equipment and new uses for equipment, for mechanical draft installations, heating, ventilating, drying, air handling or purification, dust collectors, fly ash precipitators, etc. American Blower Corp., PO Box 58, Roosevelt Park Annex, Detroit 32, Mich.

☐ **86. FOR CAN BUYERS**—New General Line Catalog describes varied types of cans made for petroleum, paint, and insecticide industries, and many other trades. Profusely illustrated and intended to be a useful guide for can buyers. Crown Can Co., Erie Ave. & H St., Philadelphia 34, Pa.

☐ **87. LAMINATED PLASTICS Parts, Textile Industry**—Folder describes headless package tubes, precision bobbins and pirns, hosiery forms, furnisher and other rolls, dye sticks, etc. Sizing bobbins and caps and piping for sizing machines, for the Nylon Industry are also discussed. Synthane Corp., Oaks, Pa.

☐ **88. CARBIDE TOOLS**—Chart that will simplify inventory and purchasing problems, insure proper application of carbide, and eliminate brand preferences or prejudices on the part of operators, shows tungsten carbide manufacturers' grade recommendations for chip removal, wear and impact applications. Adams Carbide Corp., 1000 So. 4th St., Harrison, N. J.

☐ **89. BUSDUCT**—Bulletin describes Power Plugin, new midget-size Busduct developed by the Frank Adam Electric Co., 3650 Windsor Place, St. Louis 13, Mo.

☐ **90. SEWAGE TRASH PUMP**—Pump with a single passage bladeless impeller for handling fibrous and trashy material in sewage operations and in the food processing industry is detailed in Bulletin 5400K1. Pump is capable of handling fibrous trash 10 to 25 times the size passable in conventional pumps. Fairbanks, Morse & Co., 600 South Michigan Ave., Chicago 5, Ill.




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## With *Easy-to-Align* Magic-Grip SHEAVES

YOU CAN MOUNT a *Magic-Grip* sheave faster than any other sheave you can buy . . . and demount it just as fast. To mount, simply slide the sheave onto the shaft and tighten three screws. To demount, use the screws to break the grip of the tapered bushing and the sheave can be slid off easily.

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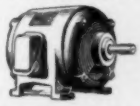
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*...Another General Chemical Achievement in "Basic Chemicals for American Industry"*

From its earliest pioneering developments with the ammonia oxidation process, General Chemical has been recognized for its uniformly high quality grades of Nitric Acid—in any desired strength—for any industrial need.

Now, the company has reached the ultimate in Nitric production with the development of an absolutely anhydrous material for new, exacting requirements. To maintain the anhydrous quality, the product contains a small amount of Nitrogen Pentoxide, $N_2O_5$, (the true anhydride of nitric acid) which stabilizes against absorption of water during storage.

This anhydrous material has many of the desirable properties of red fuming nitric acid with additional favorable characteristics for certain uses. It is available in 55 gallon drums or tank cars. Further information may be obtained from any General Chemical office listed below.

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Absorbs moisture from atmosphere
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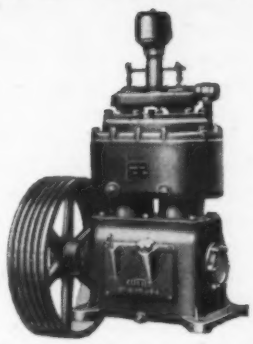
# Curtis

## AIR

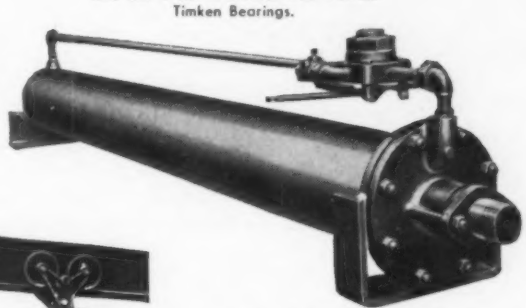
## Hoists

## Cylinders

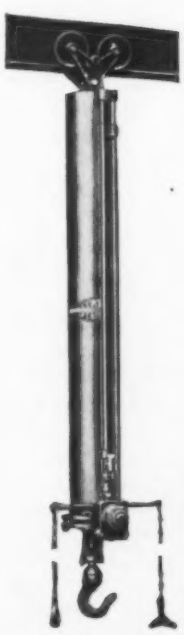
## Compressors



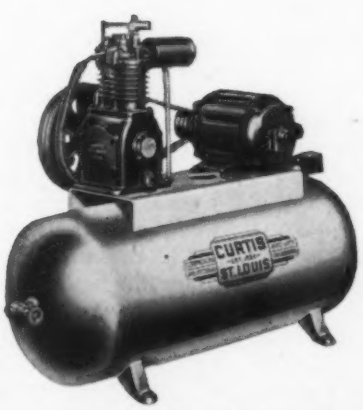
Model C Water-Cooled Compressors, up to 50 H.P. Fully Enclosed — Dust and Dirt Proof — Carbon-free Valves. Timken Bearings.



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Curtis Air Hoists Provide Accurate, Low-Cost Lifting of Material or Machines.




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Industrial plants throughout the country are using Curtis Compressors, Hoists, and Cylinders to reduce production cost through manhours saved.

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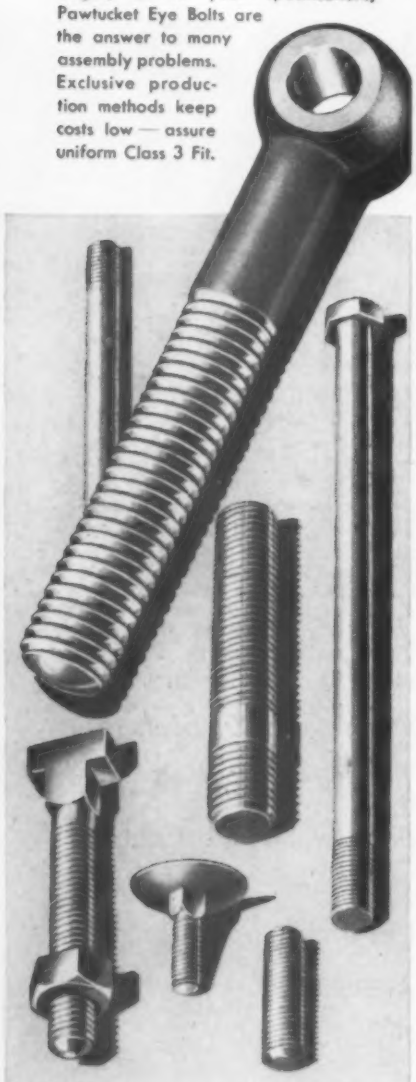
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☐ Air Compressors

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T.M. REG.

# F.O.B. filosofy of buying

A PURCHASING agent from overseas was hailed as a distinguished visitor by the press of Albert Lea, Minn., last month. He was E. Bremmer, P. A. for the Nationale Cooperative Aan en Verkoopereniging Voor de Lanbouw Central Bureau, Haringvliet, Rotterdam, The Netherlands, here to inspect some new type dairy equipment at the Universal Milking Machine Company. Quite a handful of type to get on a standard size business card.

• •

ANOTHER P. A. got into the news at Indianapolis, when M. V. Carley, Purchasing Agent for National Homes Corporation, of Lafayette, signed on the dotted line for a cool million dollars' worth of Youngstown all-steel kitchens for installation in the prefabricated houses manufactured by his firm. The picture accompanying the story, however, showed the happy salesman, Charles H. Teague of Radio Equipment Company, Indianapolis, who set all sorts of records in the deal. For the manufacturer, it was the largest single sale by a single salesman to a single customer in history. For the dealer, it was bigger than the collective total sales on the line last year. For the P.A., who is casually mentioned in the last line of a two-column story—Ho, hum, it's all in the day's work.

• •

WE admit having a morbid interest in surveys and their findings, particularly those which have to do with the perennial question of purchasing influence. The January 1 issue of *Sales Management* reports on such a survey recently made by the du Pont Company. The interesting anatomical caption of the article suggests the result: "Who has a voice in purchasing? . . . Many hard-to-see people have a finger in the purchasing pie."

The inquiry was sent to a broad range of industrial executives including management, engineering, and research, in eight major industries. We quote from the summary:

"52.5% of the respondents *classified themselves* as a direct influence on the purchase of materials or ingredients. 80.5% of the total had either direct, indirect, or both influences on material and ingredient purchases. 46.7% indicated a direct influence on the purchase of operating supplies, while 25.8% reported indirect influences. 39.5% of the respondents indicated a direct influence on the purchase of plant and production equipment. The indirect influences were greater for this type of purchase than any other; about 32% were *self-classified* as indirect influence."

• •

ONE of the most attractive and interesting brochures that have come to our attention in recent months is "The Story of United States Rubber Company". In the course of a comprehensive summary of the company's organization, products, and operations, a page is devoted to each of the ten "Auxiliary Departments", of which purchasing is one. Here's what they have to say about the buying job:

"Our plants are operated with the help of people outside our Company—people who mine coal and grow cotton and draw steel wire—people in industries of all kinds. The tie between these people and us is our Purchasing department.

"Covering both our domestic and foreign operations, this department buys or leases the materials, equipment, supplies and services needed to manufacture our products and maintain our plants and offices.

"Our purchasing people must know the materials required by each division as well as the equipment and processes used. This is important in their relations with both our divisions and suppliers.

"Inventory control is a big part of their work. By purchasing only those supplies required for current and near future production, they

keep a minimum of the Company's cash tied up in inventories.

"Operation of the department stems from a Purchasing committee. This group is appointed by the Executive committee, which sets the major policies that guide the Purchasing department and the purchasing people of all our divisions.

"Our purchasing department is in constant contact with all other departments of the Company and all of our varied sources of supply."

• •

INDICATED purchasing policy, as reported in the January report of the NAPA Business Survey Committee, was "cautious optimism". This is translated by Dr. Lewis Haney as "conservatively bullish". Business columnist Elmer Roessner refers to the PAs as "smart, cheerful, cautious".

• •

WHEN the City of Boston went looking for a new purchasing agent in January, Mayor Hynes picked John V. Moran, an ex-FBI agent for the job. Explaining his qualifications, Mr. Moran remarked, "During the war, it was necessary for FBI agents, guarding factories against sabotage, to learn many of the intricate processes of manufacturing. From there it's only a step to figuring out how much it costs to produce a certain article." Vendors, beware! The FBI always gets its value!

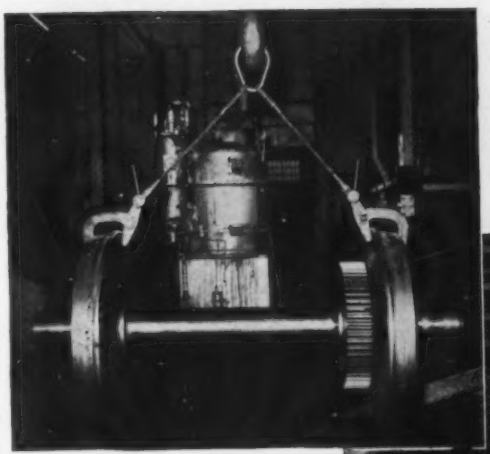
• •

THE City of Quincy, Mass., installed a new city manager in January. One of his first official statements, reported in the *Patriot-Ledger* (January 11) was: "The purchasing department of a city is of major importance. It is in the purchasing department that money can be saved or wasted. It, along with the financial departments—those of the assessors and treasurer—are the key departments with respect to saving money." With this introduction, he proceeded to abolish the office of city purchasing agent and announced that he would personally do the buying, along with his other manifold duties.

• •

A NEWSPAPER clipping from Memphis, Tenn., refers to an organization which may be unique in purchasing circles—the Purcher Ettes, described as the "ladies' auxiliary of the National Association of Purchasing Agents".


"HERCULES"
REG. U. S. PAT. OFF.
RED-STRAND
WIRE ROPE
and
WIRE ROPE SLINGS



SAFE
DEPENDABLE
ECONOMICAL



Two types of Flat-Laced Slings are shown here. These slings can be used singly, or they can be made into multiple legged bridle slings. All types of standard and special fittings can be employed in their assembly. The design of these flat, belt-like slings provides greater flexibility . . . more resistance to kinking . . . easier handling . . . larger and smoother supporting area . . . longer life.

Write for
Bulletin No. FLS-48.

"HERCULES" (Red-Strand) Wire Rope and Wire Rope Slings have proved their fitness by the acid test of actual performance. There is a right type for any purpose. Our Engineering Department will gladly help you select the correct rope or sling for your particular needs.

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# POWELL VALVES have *these* "ABILITIES" to a high degree:



Fig. 190—150-pound Iron Body Bronze Mounted "Irenew" Globe Valve with regrindable, renewable "Powellium" nickel-bronze seat and disc.

***ADAPTABILITY.*** The Powell Line is so complete* that there's a Powell Valve especially adapted, in design and material, to meet the requirements of each and every industrial flow control service.

***DURABILITY.*** Powell Valves are noted for their durability. That is because each Powell Valve is built to stand up under the specific flow control conditions to which it may be subjected.

***DEPENDABILITY.*** Every Powell Valve is specifically designed to give dependable, uninterrupted service over a long period of time. That is why Powell Valves reduce costly "down time" for maintenance to a minimum.



Fig. 375—200-pound Bronze Gate Valve. Screwed ends, inside screw rising stem, union bonnet, renewable wear resisting "Powellium" nickel-bronze disc.

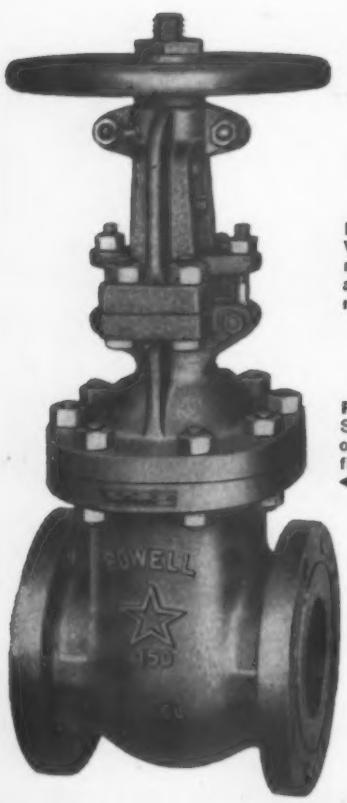



Fig. 1503 — Class 150-pound Cast Steel Gate Valve with flanged ends, outside screw rising stem, bolted flanged yoke, tapered solid wedge.

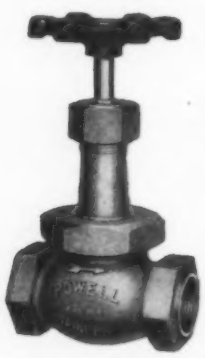



Fig. 1861—200-pound Stainless Steel Globe Valve with screwed ends, union bonnet and inside screw stem. In 2½" and 3" sizes these valves have bolted bonnets.



Fig. 1793—Large 125-pound Iron Body Bronze Mounted Gate Valve. Made in sizes 2" to 30", incl. Has outside screw rising stem, bolted flanged yoke, tapered solid wedge.

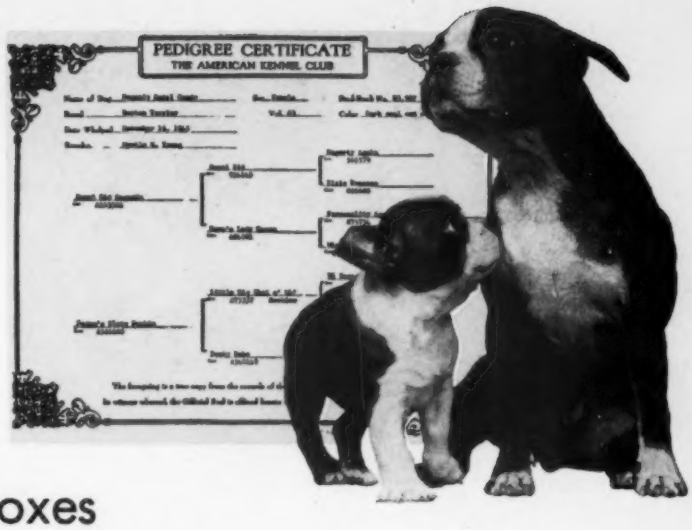
*The Complete Powell Line includes Globe, Angle, "Y", Gate, Check, Non-return, Relief and Flush Bottom Tank Valves in Bronze, Iron, Steel and a wide range of Corrosion-resistant metals and alloys.

**Ask your nearest Distributor—or write direct**

**The Wm. Powell Co., Cincinnati 22, Ohio**

**DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES**

**POWELL VALVES**




**The Boston Terrier** was bred in Boston about sixty years ago from English Bulldog and white English Terrier stock. This little fellow is exceptionally lively and bright, and truly deserves the title of "American Gentleman."

## When You Buy Boxes

# Look First for the Pedigree

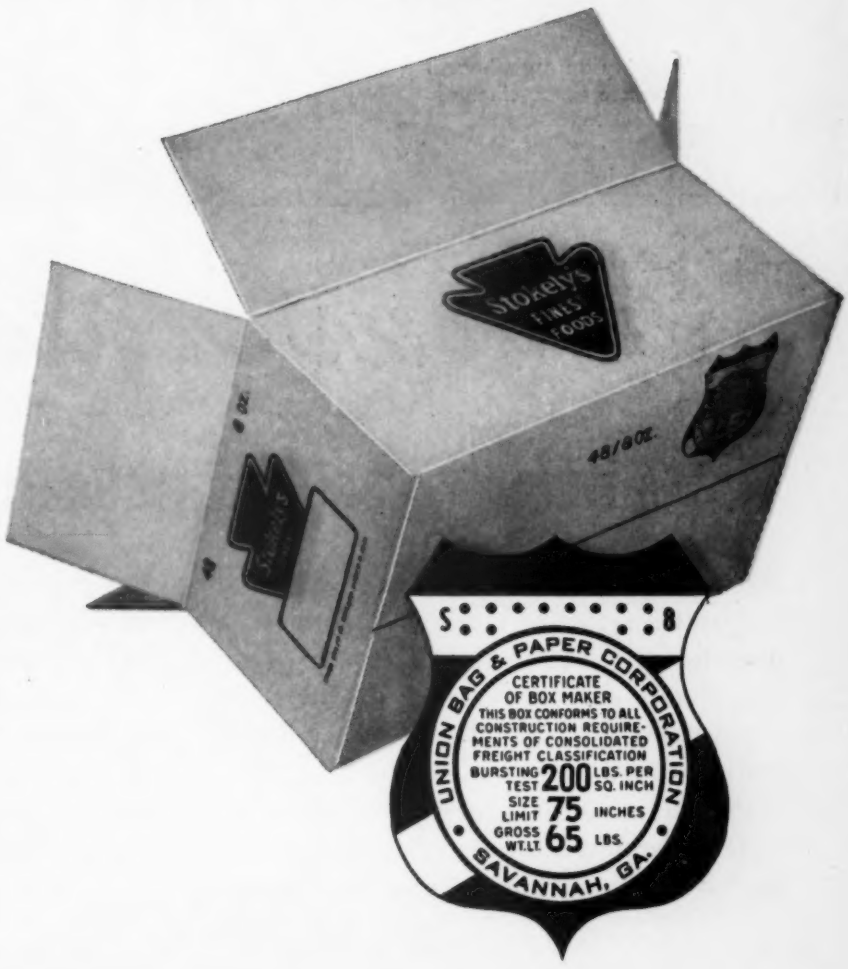
MAKERS of famous brand-name products cannot afford to gamble on corrugated containers. They must have a box that will carry their product safely from factory to dealers' shelves all over America.

That is why Stokely-Van Camp pack Stokely's Finest canned vegetables, dinner table favorites of millions, in Union boxes—the boxes with a pedigree.

75 years of leadership in kraft packaging stands behind Union boxes. Every step in the making, from timber to finished box, is quality-controlled by one management in America's largest pulp-to-container plant.

Vast forest resources, four of the most modern corrugating plants, and five of the nine largest paper machines in the world are your assurance of consistent quality, dependable service and fair price, today and in the future.

That's why, every month, more famous national-brand products are shipped in Union boxes.




TRADE MARK UNION

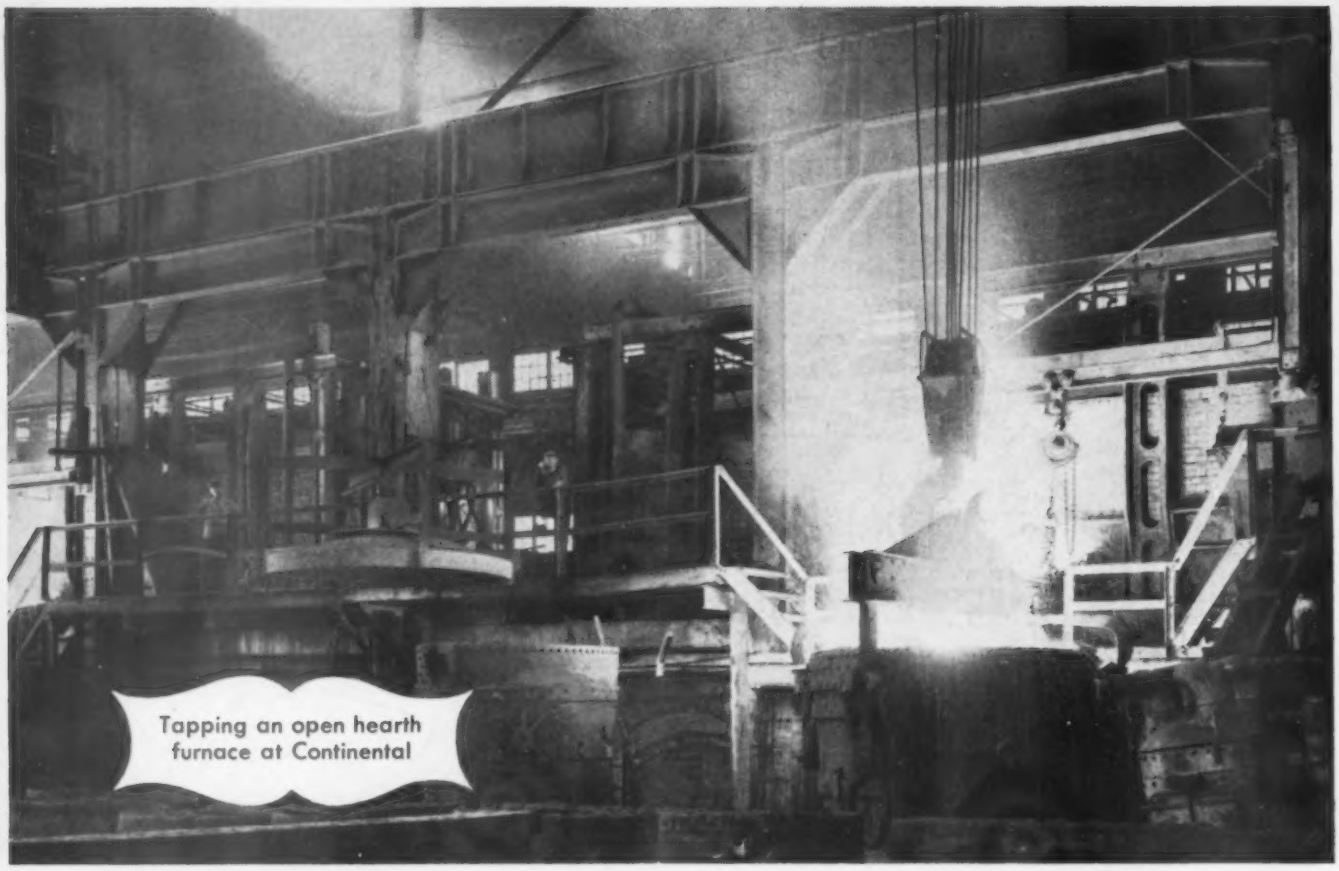
*Dependable Packaging Since 1872*

# UNION Corrugated Containers

## UNION BAG & Paper Corporation

**Principal Offices: WOOLWORTH BLDG., NEW YORK 7, N. Y.**

***Corrugated Container Plants:* SAVANNAH, GEORGIA • CHICAGO, ILLINOIS • TRENTON, NEW JERSEY**




# *In your castings—*

## Get quality steel controlled at the source!

Steelmakers as well as founders, Continental operates a series of eleven acid and basic open hearths of from 25 to 75 tons capacity and stands guard over steel quality from the melting practice through to finished castings.

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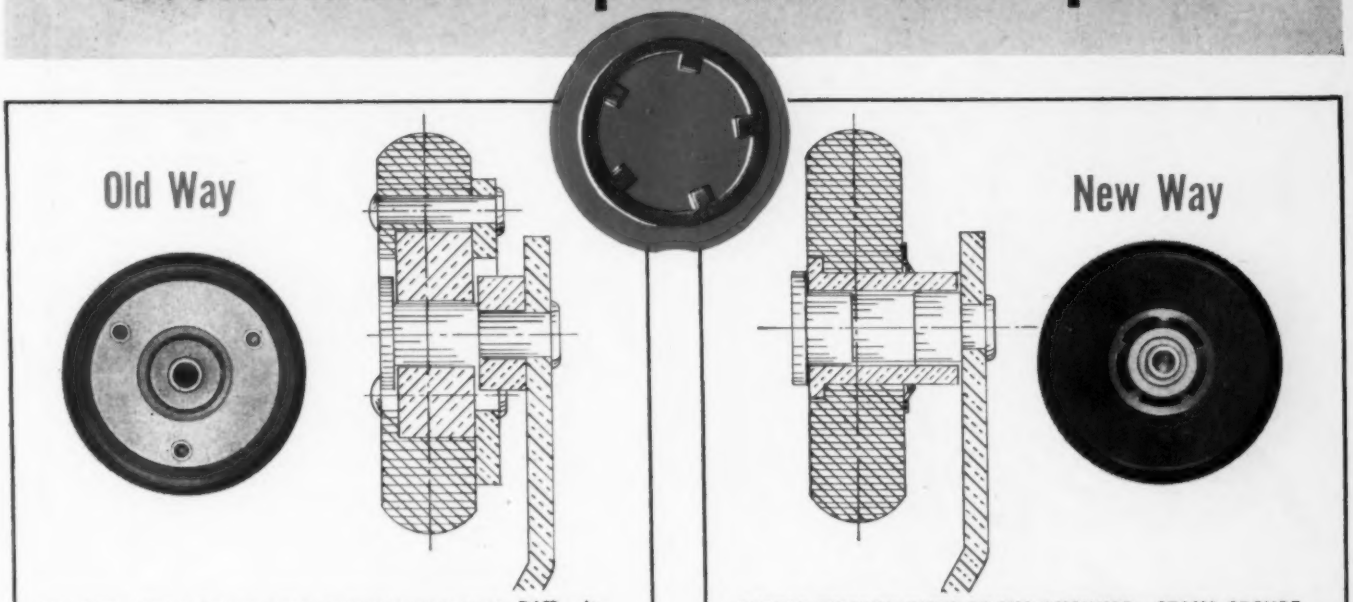
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***Iron, Alloy Iron and Steel Rolls for all industries***



*Want Additional Product Information? See Page 19.*

# Single Truarc Ring Slashes Unit Cost 44% ...eliminates 3 operations and 5 parts




**WASHER AND 3 RIVETS HELD BUSHING IN WHEEL.** Difficulty in accurate positioning of rivet holes caused rejects. Also rivets loosened in use.

**SINGLE TRUARC RING LOCKS BUSHING—STAYS SECURE.** Self-locking ring (type 5105) needs no groove. Replaces washer, 3 rivets, separate spacer.

Redesign with one Waldes Truarc Ring cuts cost of wheel used in Har-Vey Rolling Door Hardware (for residential doors) from 26.1¢ to 14.5¢—a 44% saving for Metal Products Corporation, Miami. Use of Truarc cuts manufacturing time 76%. Eliminates 5 separate parts, 3 press operations. And gives a product that stands up better in use!

Redesign with Truarc Rings and you too will cut costs. Wherever you use machined shoulders, bolts, screws, nuts, cotter pins, snap rings, there's a Truarc Ring that does a better job of holding parts together. Truarc Rings are precision engineered. They make assembly and disassembly quick and easy.

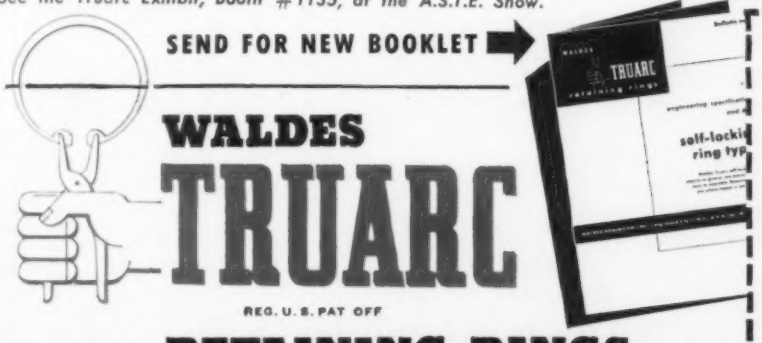
See what Truarc Rings can do toward cutting overall costs for you. Send your blueprints to Waldes Truarc engineers for individual attention, without obligation.

**Redesign with Truarc self-locking ring produces these savings:**

| | saving |
|---|---|
| eliminates drilling 3 rivet holes | $.0042 |
| eliminates riveting washer | .0111 |
| eliminates punching washer | .00033 |
| eliminates washer, spacer, rivets | .02236 |
| cuts cost of inserting bushing | .00037 |
| cuts cost of inspection | .0032 |
| cuts cost of wheel, bushing, rivet | .0797 |
| | .12126 |
| less—cost of Truarc Ring | .00528 |
| TOTAL SAVING PER UNIT 44% | $.11598 |

*See the Truarc Exhibit, Booth #1135, at the A.S.T.E. Show.*

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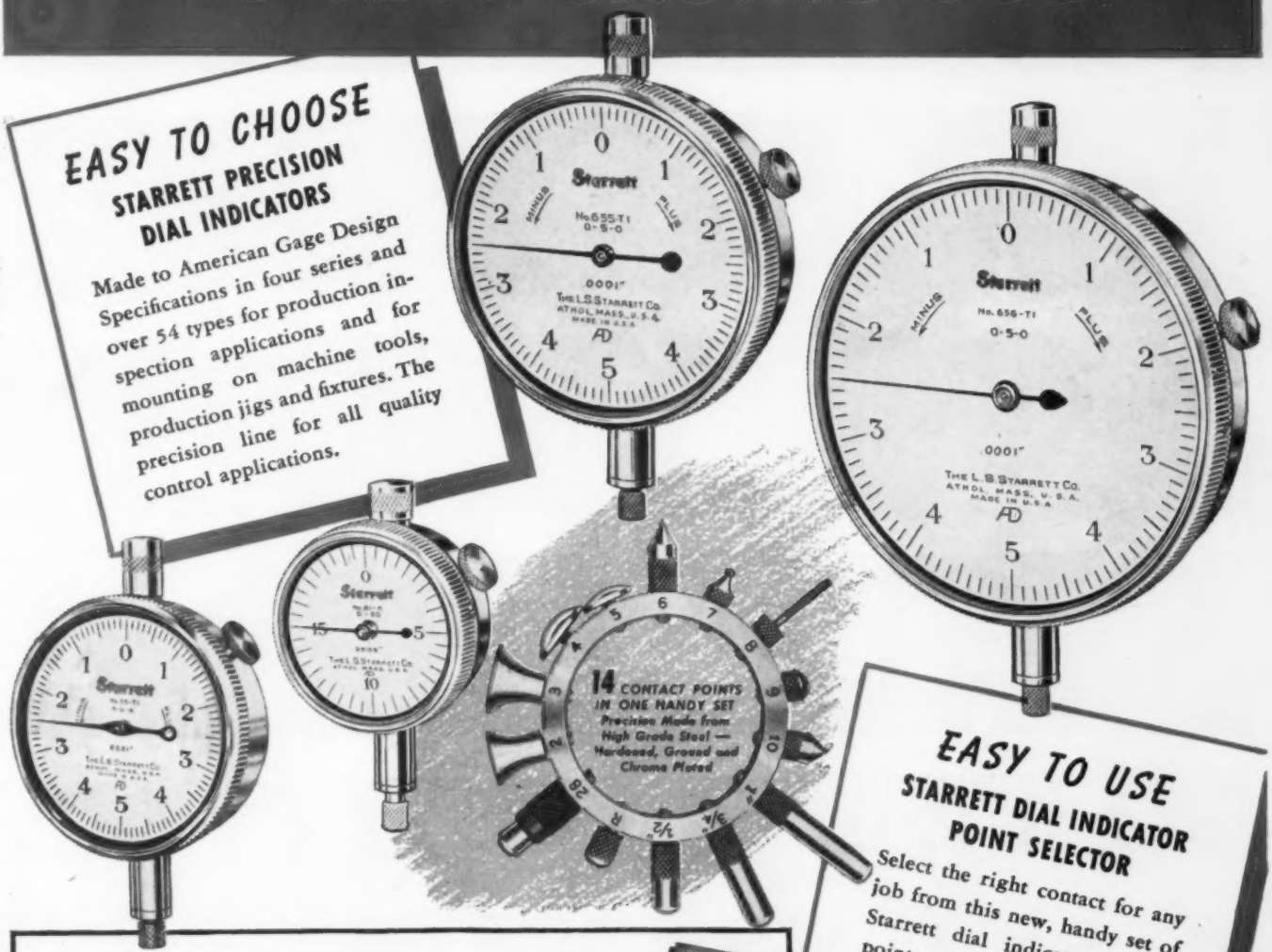
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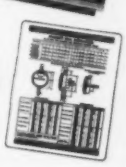
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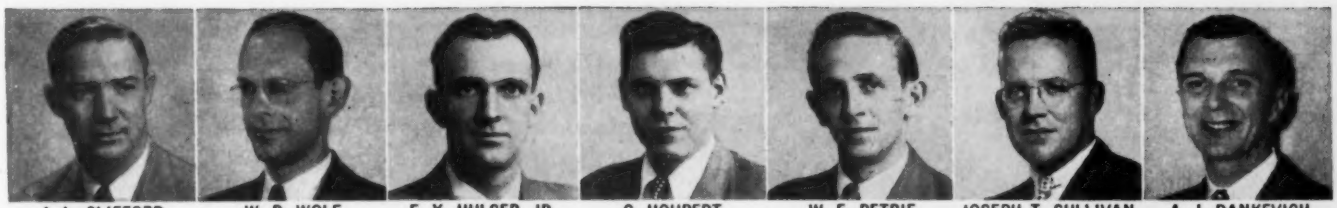
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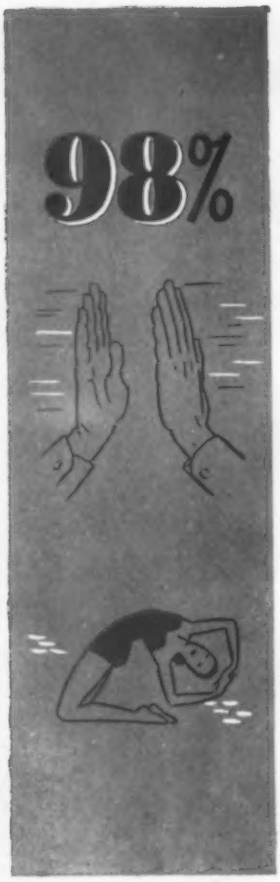
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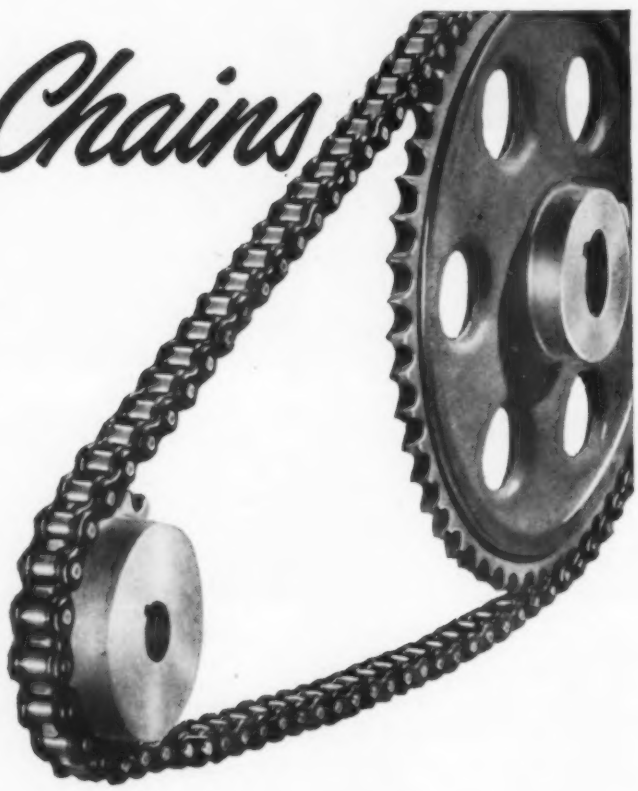

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**efficiency** • Roller chain drives deliver 98% efficiency under all working loads. And this efficiency is not appreciably diminished throughout the lifetime of the drive. Properly applied, a chain drive has a higher sustained efficiency than any other mechanical power transmission medium.

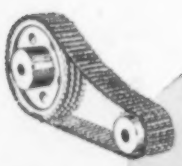
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**versatility** • Roller chains have no "wrong side." They make proper contact with sprocket teeth on either side and can be used to drive multiple shafts from a single power source . . . are equally efficient on long or short centers. They can operate efficiently in conditions of dust, dirt, grease, oil and water . . . you need no special chains to overcome each of these conditions.

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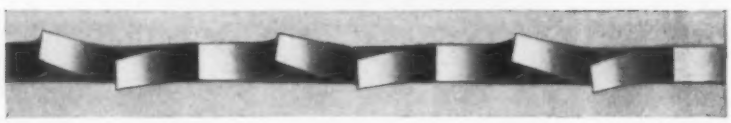



# SEE WHAT SIMONDS offers in these famous "RED END" Hack Saw Blades

## ACCURATELY MILLED TEETH

Simonds Design Tooth Shape, maintained by accurate milling, provides perfectly formed teeth of exact height. This distributes wear evenly to all teeth with resultant longer cutting life.

## PRECISION SET TEETH



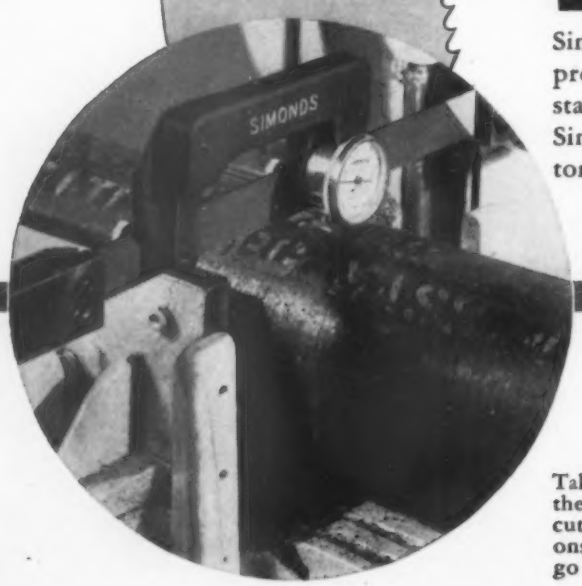
Machines of advanced design set the teeth to exacting tolerances. This not only provides adequate clearance but results in straighter cuts throughout the life of the blade.

## UNIFORM HARDNESS

Simonds Method of Heat Treating produces uniform hardness throughout the length of the blade unapproached by conventional heat treating methods. As a result, there is no variation in the grain structure of the steel and the teeth hold a cutting edge longer. This means consistently better cutting performance and low cutting costs.

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**Take the guesswork out of hack saw tensioning with a SIMOMETER—the easy, modern way to insure correct blade tension and get straight cuts, faster cuts and more cuts per blade. Ask for a SIMOMETER demonstration and see for yourself how it can make your hack saw dollars go farther.**

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## Westinghouse *Fluorescent Lamps*

**the lamps that last 3 times as long... yet cost no more!**



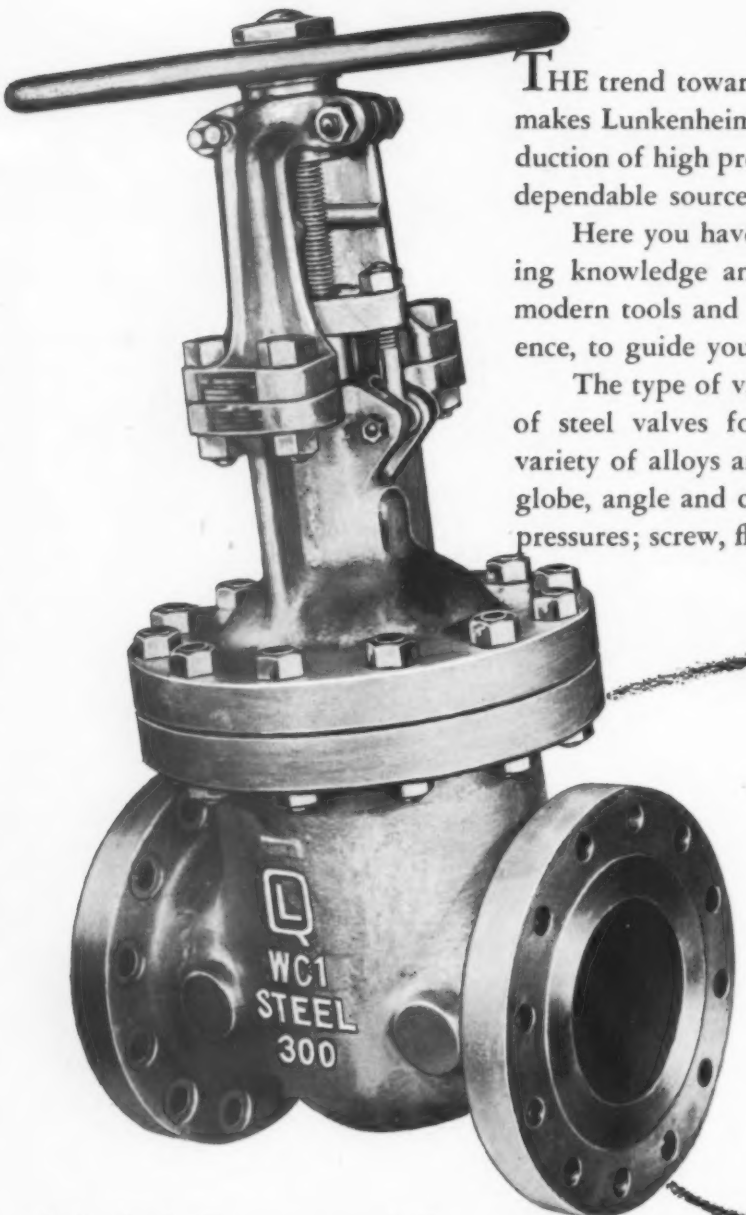

Yes, one Westinghouse fluorescent lamp now lasts as long as 3. In average store installations, for example, it lasts 2½ years; in average one-shift offices or factories, 3 years. You actually buy lamps only ⅓ as often! You also *save on the time spent replacing burned-out lamps.* So, start getting these economies now. Next time specify Westinghouse fluorescent lamps. Lamp Division, Westinghouse Electric Corp., Bloomfield, N. J.




**YOU CAN BE SURE... IF IT'S Westinghouse**

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**300 lb. CAST STEEL GATE**
**Fig. 1938-WD6**

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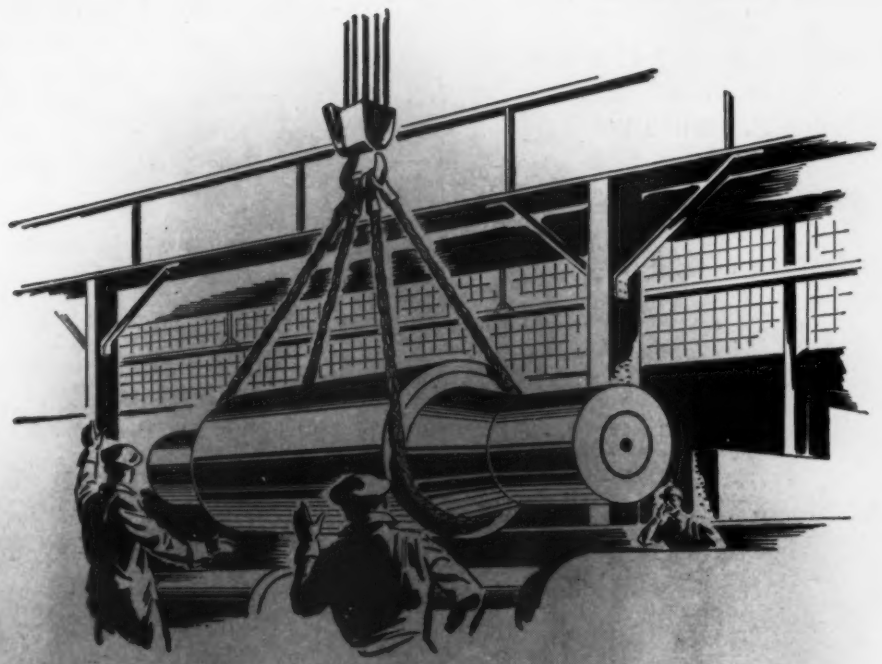
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"After we were awarded the contract for electrical work in a new ice plant, we discovered that the power distribution panel was far too large for the space allotted to it. This panel was to accommodate two 60 horsepower motors, plus several smaller ones.

"There was only one convenient location, so we refigured the panel size based on using Fusetron Dual-Element Fuses. We reduced the panel sections for the 60 H.P. motors from 600 amp. fuses to 400 amp. Fusetron fuses and reduced the sizes for the other motors in proportion.

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1. Protect against short-circuits.
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10. Protect coils, transformers and solenoids against burnout.

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TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION

BUSS

# Fusetron DUAL-ELEMENT Fuses

## Give All-Purpose Protection

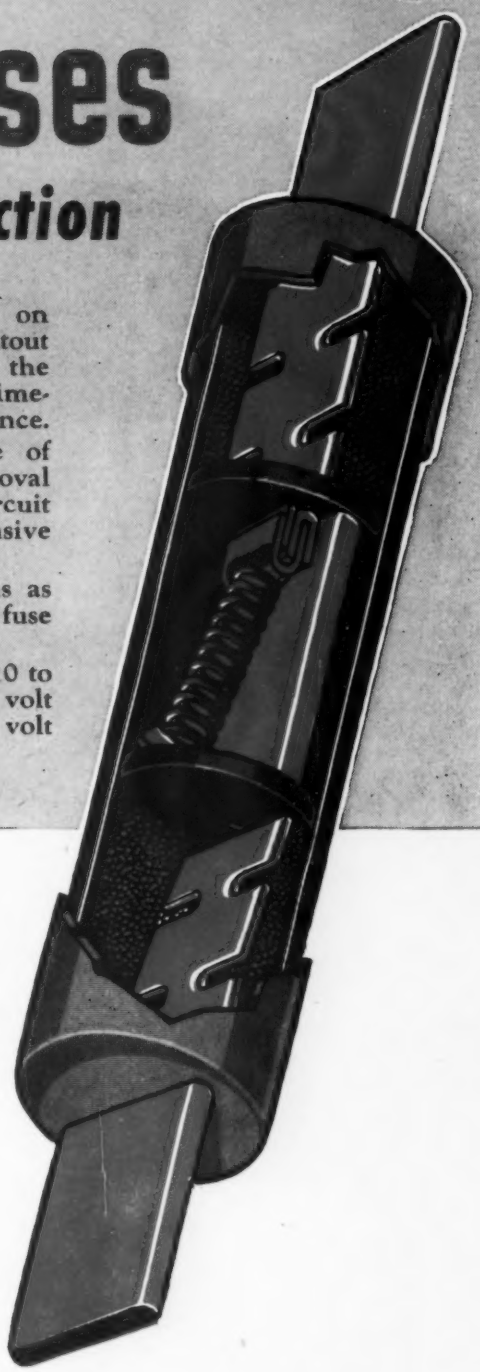
**because . . .** The fuse link element opens on short-circuit — the thermal cutout element protects on overloads — the result, a fuse with tremendous time-lag and much less electrical resistance.

They have the same degree of Underwriters' Laboratories approval for both motor-running and circuit protection as the most expensive devices made.

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Obtainable in all sizes from 1/10 to 600 ampere, both 250 and 600 volt types. Also in plug types for 125 volt circuits.

Their cost is surprisingly low.



## DON'T RISK LOSSES

**One needless shutdown . . .**

**One lost motor . . .**

**One destroyed switch or panel . . .**

**May cost you far more than replacing every ordinary fuse with a FUSETRON dual-element fuse**

**MAIL THE COUPON NOW for complete information about Fusetron Fuses and their 10 point all-purpose protection**

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Please send me complete facts about FUSETRON Dual-Element FUSES.

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## How to make planned assembly savings pay off



*ASSEMBLY COSTS CUT 45% G-M Laboratories, Inc. directly compared fastening costs before setting up assembly operations on this Skan Projector, found machine screw fastenings would cost almost twice as much as the P-K method. Four Hex Head Type Z Screws are used, together with 10 Type F and 4 Type U Drive Screws. G-M wisely planned assembly savings by choosing Self-tapping Screws; insured these savings by specifying P-K.*

## Don't let screw failure cancel savings



TYPE F
(Also made with Phillips head)

Three steps are needed to *insure* assembly savings. First, engineer your assembly for minimum cost. Next, select the simplest, speediest fastening method. Then, if as in most cases, you find this to be with Self-tapping Screws, use the best that money can buy. For, if screws run offsize, if they break or otherwise fail, all your carefully *planned* savings are lost.

## Choose P-K* Screws ... avoid slowdowns and scrapped parts

Parker-Kalon, originators of Self-tapping Screws, learned long ago how to keep hardness and toughness properly balanced in *every* screw—learned to maintain the uniform quality that keeps assembly humming. And there's no substitute for 35 years experience.

Remember, the actual cost of screws depends, never on price, *always* on performance. Specify Parker-Kalon, and you'll see why the makers of thousands of the nation's best known products say—IF IT'S P-K . . . IT'S O. K.!

Parker-Kalon Corporation, 200 Varick St., New York 14, N.Y. Sold everywhere through accredited Distributors.

**NEED SPECIAL SMALL SIZE PHILLIPS HEAD SCREWS?**
P-K Type A or Z, in No. 0 or 00 diameter, with a No. 0 Phillips Recess, can be made to order, quantity permitting.

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P-K TRADE MARK

*The Original*
# PARKER-KALON* SELF-TAPPING SCREWS

A TYPE AND SIZE FOR EVERY METAL AND PLASTIC ASSEMBLY



*Want Additional Product Information? See Page 19.*

# Announcing

## A NEW SERIES OF

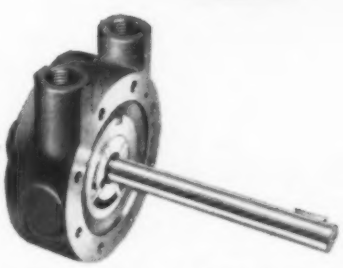



## AUTOMATIC REVERSING VANE PUMPS

**Nos. 8021, 8061, 8101 — and**

**Stripped Models with Housings**

**Stripped Models without Housings**



**Stripped Models with Housings, Nos. 8022, 8062 and 8102.** Simplify installation, particularly where internal discharge and suction ports are not readily incorporated in the machine design, or where outside piping is desirable.



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Many important and convenient features have been designed into this New Series of Brown & Sharpe Pumps for lubrication and coolant systems on machines that reverse. Heading the list is the fully-automatic reversing feature with unidirectional flow. Other features include... three sizes—2½, 5 and 11½ gpm at 0 pressure, max. speed 1140 R.P.M.... easy changeability of flow direction from one port to the other, in the field... mounting design that permits foot to be set in 4 different positions with ports held vertical.

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# Riegel

**• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •**


TRI CLAD MOTORS
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will run safely without relubrication for as long as any general-purpose motor you can buy—
and if the application makes relubrication a must, you can grease a TRI CLAD without halting production
GENERAL ELECTRIC
HERE'S

## TRI CLAD MOTORS will run safely without relubrication for as long as any general-purpose motor you can buy—

Tri-Clad extra lubrication "protection" can save you money because:

**1.** Tri-Clad's oversize grease reservoir and the heaviest standard-service bearings mean you do not have to bother with greasing between motor check-ups.

**2.** When relubrication is needed on those tough applications, you can grease a Tri-Clad without interrupting production-line operations.

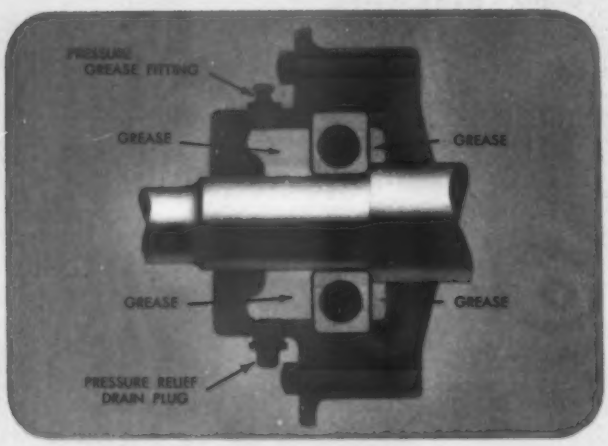
Tri-Clads are grease-gun easy to lubricate *on the job*. Moreover, a Tri-Clad motor will run safely where an ordinary motor would fail. Chances are you'll be spared the cost of a "special" motor.

**YOU BE THE JUDGE!** The best way to prove to yourself that Tri-Clad gives you the most for your motor dollar is to contact your local G-E office. Tri-Clad stocks are complete. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

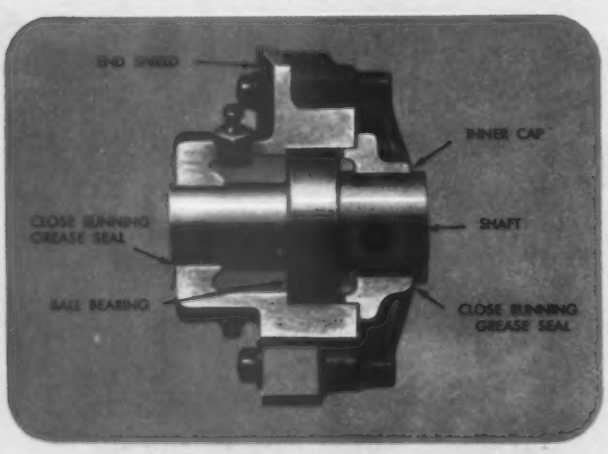





**1** **EXTRA BEARING PROTECTION** — Tri-Clad gives you extra bearing protection because heaviest standard-service bearings are carefully selected to withstand severe loads for long periods.




**2** **EXTRA GREASE** — Four times the ordinary amount of grease is packed into the large Tri-Clad grease reservoir. Since bearing life depends on grease, this means that Tri-Clad motors will run safely for years — for as long as any general-purpose motor you can buy.




**3** **SEALED-IN BEARINGS** — Bearings and grease are completely sealed in a cast housing with *long* running seals for extra protection from dirt, dust, and lubricant leakage.

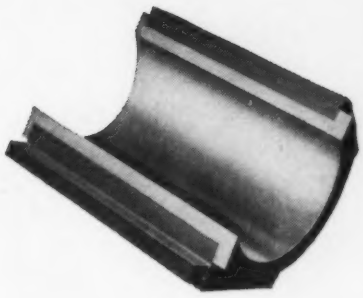


**4** **PRESSURE-RELIEF GREASING** — An efficient system of pressure-relief lubrication (with standard fittings) enables a Tri-Clad motor to be quickly and easily greased on the job when and if it's needed.

GENERAL ELECTRIC

752-3







## *Whenever you have a*

# *BABBITTING PROBLEM...*

## *. . . make full use of NATIONAL service*









Because bearing applications vary so much, the compositions of linings must likewise vary. Consequently, it's often difficult to know just which babbitt is best suited to a particular bearing.

That's why it's sound purchasing practice—sound production practice—to make full use of NATIONAL service.

***What is this NATIONAL service?***

It's service that gives you the benefit of NATIONAL'S experience with bearing and babbitting problems in plant after plant after plant across the country.

It's service that brings you the bearing alloy know-how of the leader in lead.

It's service that brings you bearing metal designed (1) to bond properly to the shell... (2) to be ductile enough to fit itself to shaft alignment... (3) to protect shafts during temporary lubrication failure or when grit and waste edge in.

It's service brought to you by an organization NATIONAL not only in name but also in scope—with strategically located plants and stocks that assure quick and economical handling of your bearing metal needs.

So . . . whatever your babbitting problem, make full use of NATIONAL service.

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***Another advantage of NATIONAL service...*** is the number of lining alloys and fluxes available.

Tin-base and lead-base babbitts.
Dutch Boy* Tinning Compound.
Nalco* Dipping & Coating Flux.

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## *LEAD COMPANY*

*111 Broadway, New York 6, N.Y.*



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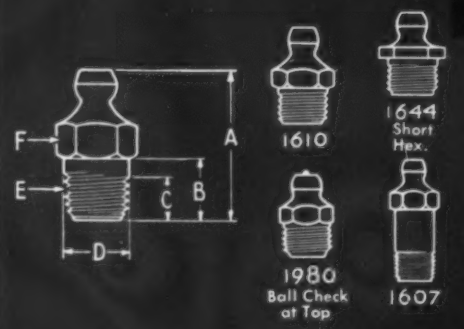
MINNEAPOLIS Honeywell — *Advanced Instrumentation* FOR BETTER PROCESSING — BROWN INSTRUMENTS

# Genuine ALEMITE LUBRICATION FITTINGS

DATA SHEET NO. 1

Simplify ORDERING, INSPECTION and INVENTORY CONTROL. Specify Alemite part numbers on your blueprints.

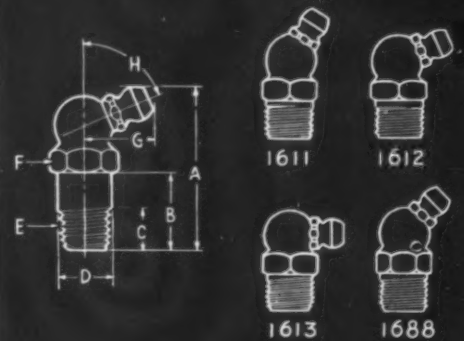
## Useful Information to Help You Select and Specify the Right Alemite Fitting for Every Bearing




### STRAIGHT HYDRAULIC FITTINGS

| Part No. | A | B | C | D | E† | F |
|---|---|---|---|---|---|---|
| 1607 | 1 17/64" | 25/32" | 13/64" | 13/32" | 1/8" P.T. | 7/16" |
| 1610 | 1/4" | 17/64" | 13/64" | 25/64" | 1/8" P.T. | 7/16" |
| 1618 | 1 7/64" | 5/16" | 1/4" | 1/2" | 1/8" P.T. (Female) | 1/2" |
| 1634 | 13/16" | 5/16" | 1/4" | 13/32" | 1/8" P.T. | 7/16" |
| 1644 | 21/32" | 5/16" | 1/4" | 13/32" | 1/8" P.T. | 7/16" |
| *1650 | 57/64" | 3/8" | 19/64" | 13/32" | 1/8" N.P.T.F. | 7/16" |
| 1669 | 1 3/4" | 1 17/64" | 1/4" | 13/32" | 1/8" P.T. | 7/16" |
| 1684 | 2 5/8" | 2 3/16" | 5/16" | 13/32" | 1/8" P.T. | 3/8" |
| *1708 | 53/64" | 23/64" | 19/64" | 13/32" | 1/8" N.P.T.F. | 11/32" |
| 1980 | 41/64" | 17/64" | 7/32" | 13/32" | 1/8" P.T. | 7/16" |

*Leak-proof seal
†Thread size listed as 1/8" P.T. is 1/8" P.T.F.—SAE EXTRA SHORT




### 1/8" THREAD ANGLE HYDRAULIC FITTINGS

| Part No. | A | B | C | D | E† | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1606 | 1 13/16" | 1" | 3/8" | 13/32" | 1/8" P.T. | 7/16" | 15/32" | 90° |
| 1611 | 1 1/64" | 17/64" | 13/64" | 25/64" | 1/8" P.T. | 7/16" | 21/64" | 30° |
| 1612 | 53/64" | 17/64" | 13/64" | 25/64" | 1/8" P.T. | 7/16" | 1/2" | 67 1/2° |
| 1613 | 49/64" | 17/64" | 13/64" | 25/64" | 1/8" P.T. | 7/16" | 33/64" | 85° |
| 1614 | 1 5/64" | 5/16" | 1/4" | 13/32" | 1/8" P.T. | 7/16" | 31/64" | 105° |
| 1620 | 1 5/16" | 13/32" | 5/16" | 7/16" | 1/8" P.T. (Female) | 7/16" | 17/32" | 45° |
| 1623 | 1 3/16" | 9/16" | 1/4" | 13/32" | 1/8" P.T. | 7/16" | 31/64" | 67 1/2° |
| 1638 | 2 9/32" | 1" | 3/8" | 13/32" | 1/8" P.T. | 7/16" | 21/64" | 30° |
| 1649 | 2 25/32" | 2 3/16" | 5/16" | 13/32" | 1/8" P.T. | 3/8" | 29/64" | 67 1/2° |
| *1651 | 1" | 3/8" | 19/64" | 13/32" | 1/8" N.P.T.F. | 7/16" | 1/2" | 67 1/2° |
| 1688 | 61/64" | 17/64" | 13/64" | 25/64" | 1/8" P.T. | 7/16" | 27/64" | 45° |
| *1692 | 1 7/32" | 3/8" | 19/64" | 13/32" | 1/8" N.P.T.F. | 7/16" | 21/64" | 30° |
| *1693 | 15/16" | 3/8" | 19/64" | 13/32" | 1/8" N.P.T.F. | 7/16" | 31/64" | 90° |
| *1950 | 1 1/8" | 3/8" | 19/64" | 13/32" | 1/8" N.P.T.F. | 7/16" | 15/16" | 105° |

*Leak-proof seal. †Thread size listed as 1/8" P.T. is 1/8" P.T.F.—SAE EXTRA SHORT




### 1/4" PIPE THREAD HYDRAULIC FITTINGS

| Part No. | A | B | C | D | E† | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1627 | 59/64" | 23/64" | 9/32" | 17/32" | 1/4" P.T. | 9/16" | ..... | ..... |
| 1629 | 1" | 11/32" | 9/32" | 17/32" | 1/4" P.T. | 9/16" | 5/8" | 67 1/2° |
| 1691 | 1 21/64" | Female Thread | | | 1/4" P.T. | 5/8" | ..... | ..... |

†Thread size listed as 1/4" P.T. is 1/4" P.T.F.—SAE EXTRA SHORT.




### 1/4"—28 THREAD HYDRAULIC FITTINGS

| Part No. | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1636 | 31/32" | 19/64" | 1/4" | 17/64" | 1/4"-28 Taper USF-Thd. | 3/8" | 3/8" | 45° |
| 1637 | 27/32" | 11/64" | 1/4" | 1/4" | 1/4"-28 Taper USF-Thd. | 3/8" | 3/8" | 45° |
| 1641 | 31/64" | 11/64" | 1/4" | 1/4" | 1/4"-28 Taper USF-Thd. | 5/16" | ..... | ..... |
| 1652 | 43/64" | 23/64" | 1/4" | 1/4" | 1/4"-28 Taper USF-Thd. | 5/16" | ..... | ..... |
| 1680 | 59/64" | 39/64" | 1/4" | 17/64" | 1/4"-28 Taper USF-Thd. | 5/16" | ..... | ..... |
| 1698 | 1 7/64" | 51/64" | 1/4" | 17/64" | 1/4"-28 Taper USF-Thd. | 17/64" | ..... | ..... |
| 1703 | 1/2" | 7/32" | 3/16" | 1/4" | 1/4"-28 Taper USF-Thd. | 17/64" | ..... | ..... |
| 1770-A | 19/32" | 1/8" | 7/64" | 1/4" | 1/4"-28 NF-2-Thd. | 3/8" | 25/64" | 45° |
| 1792 | 31/64" | 9/64" | 1/8" | 1/4" | 1/4"-28 NF-2-Thd. | 17/64" | ..... | ..... |
| 1911 | 47/64" | 11/64" | 1/4" | 1/4" | 1/4"-28 Taper USF-Thd. | 3/8" | 15/32" | 90° |

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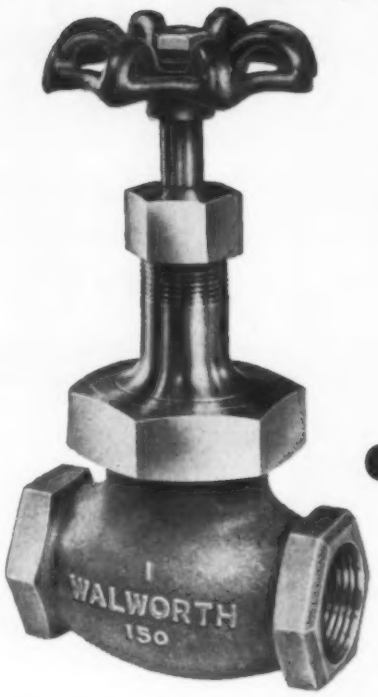


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**Improved Packing:** Molded packing of lubricated asbestos reinforced with copper wire. Suitable for practically every service. Valves can be repacked under pressure.

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## No. 95 BRONZE GLOBE VALVE

*also available in Angle Type (No. 96)*

The service ratings of the Walworth No. 95 are 150 pounds per square inch steam at 500F, and 300 pounds per square inch non-shock cold water, oil, and gas. In the manufacture of this quality bronze valve, more than 47 gages are used in machining parts to micrometric accuracy, thus insuring interchangeability of parts. For further information see your local Walworth distributor, or write: Walworth Company, 60 East 42nd St., New York 17, N. Y.

*note these 7 Great Features*



**Hexagonal Union Bonnet Connection:** Eliminates any chance of distortion or leakage even though valve is repeatedly taken apart and assembled.

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**Extra Strong Body:** Made of Composition M (ASTM B61) bronze thick enough to provide a high safety factor. Valves undergo hydrostatic shell test of 450 psi.

## These Two Valuable "Tools" of

# V-BELT DRIVE

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### V Written By GATES Engineers

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Eng. 501

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## Unsurpassed service at lowest cost with Roebling Paper Insulated Cable

YOU NEVER WANTED ECONOMY MORE than you do today . . . and you'll get it by putting circuits underground with Roebling Paper Insulated Lead Encased Cables! No more unsightly overhead lines with their expensive upkeep . . . trouble-free service, uninterrupted and dependable, is yours for years on end.

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There's a Roebling electrical wire or cable for practically every transmission, distribution and service requirement. All of them are made completely in Roebling plants where the most modern techniques and precision machines assure products of the very highest quality.

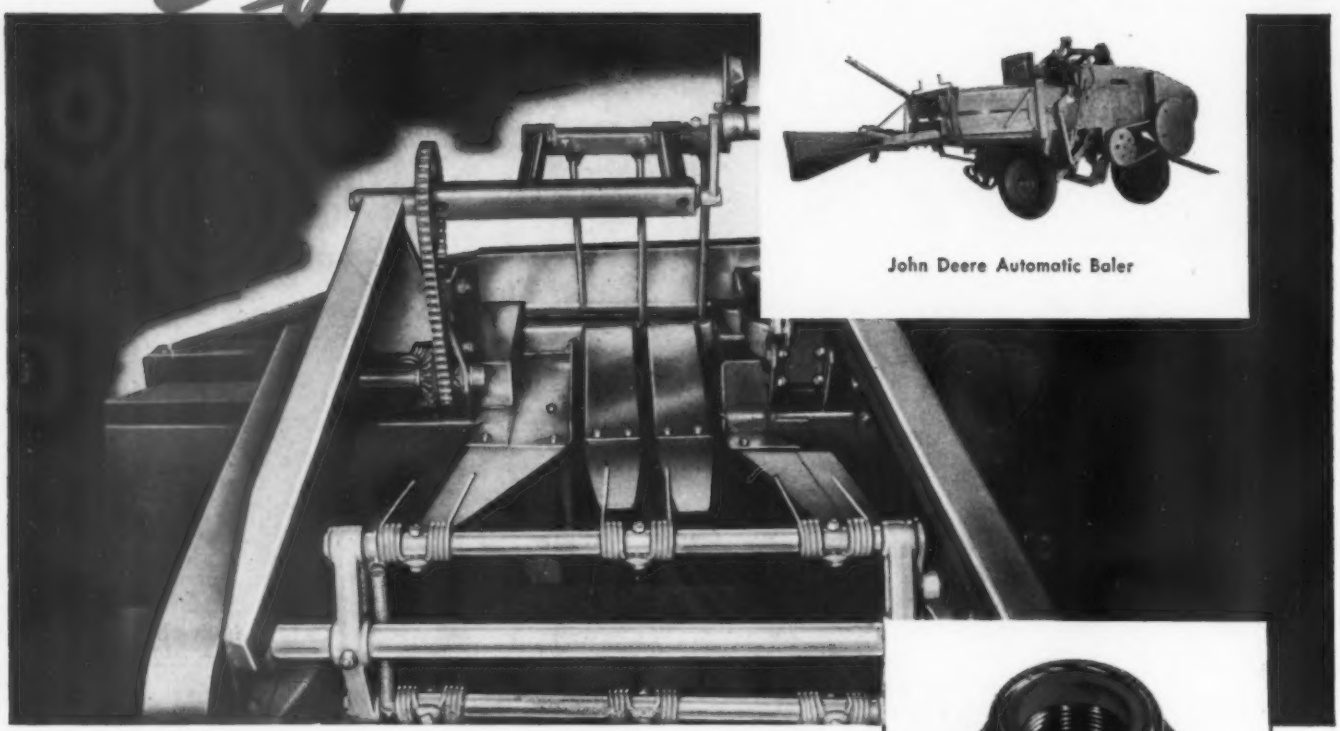
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John Deere Automatic Baler

*—the Red Elastic Collar permanently protects bolted fastenings against vibration! corrosion! . . . reduces down time . . . increases operating efficiency!*

Modern high-speed, high-performance farm machinery must be built to withstand heavy operating vibration and exposure to weather. Why? Because: a) vibration loosens critical mechanical adjustments; and b) rust "freezes" nuts on the bolt, so they must be cut or burned off when repairs are necessary.

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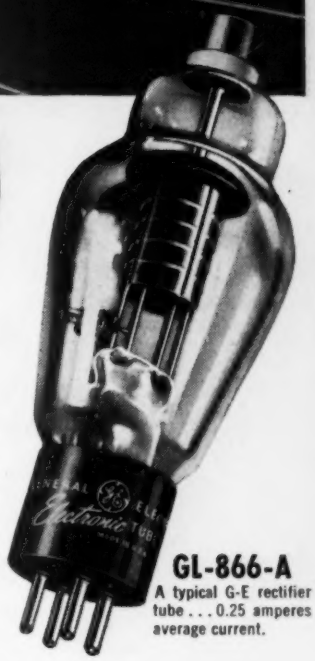
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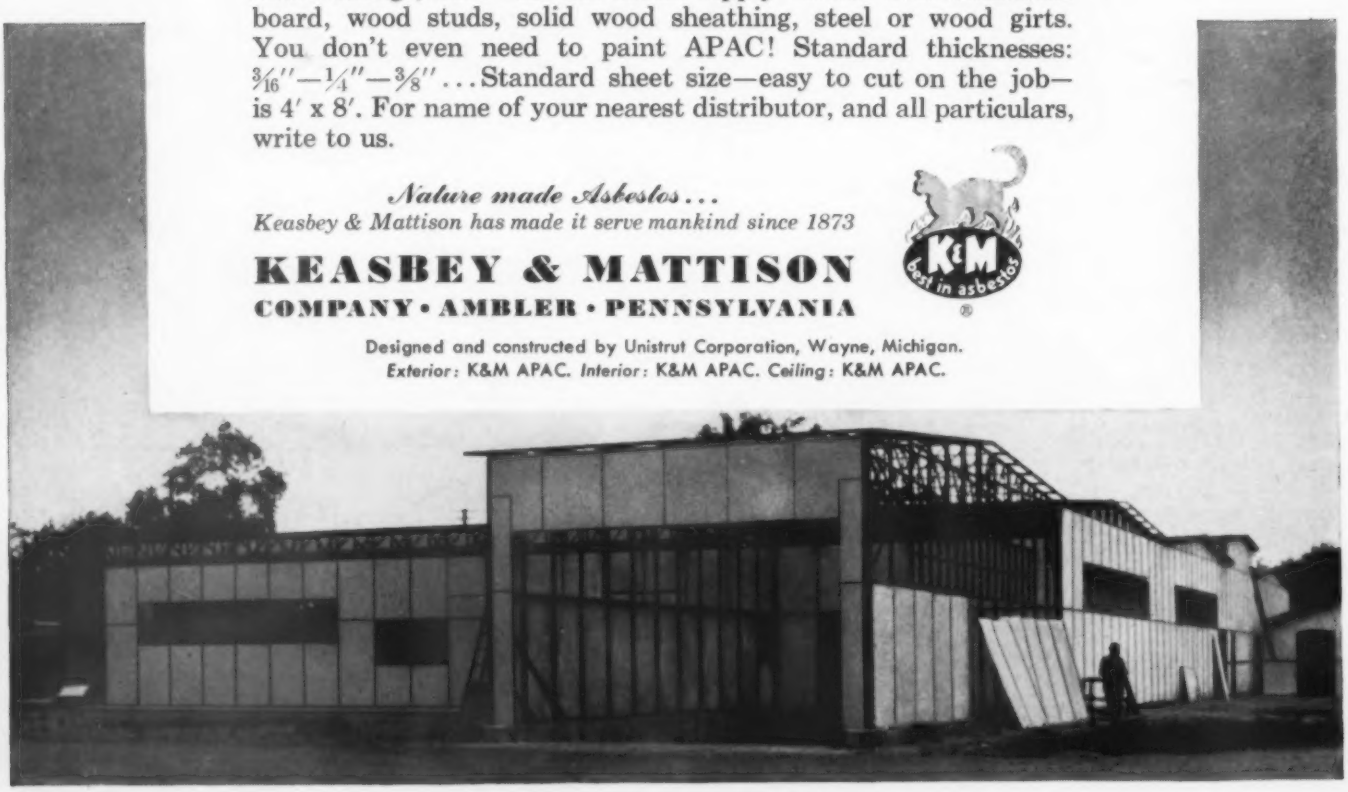
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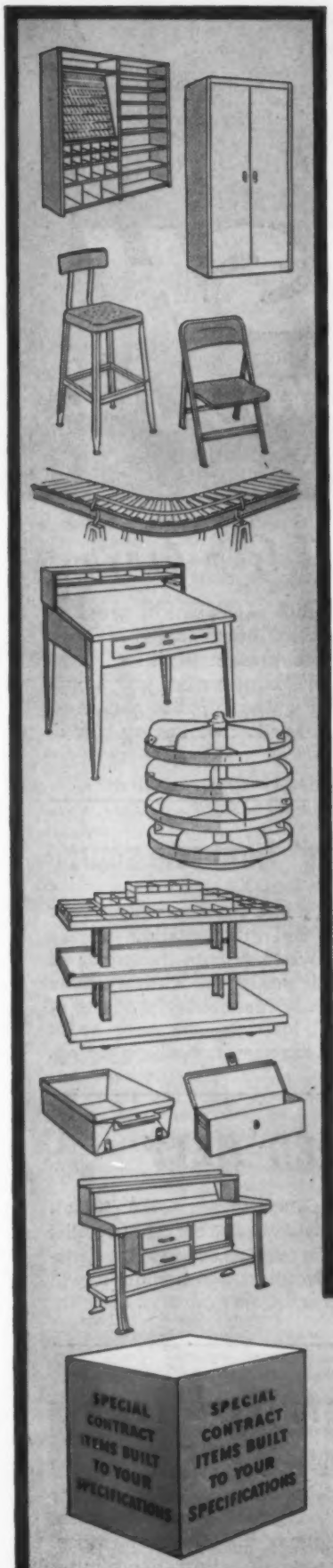
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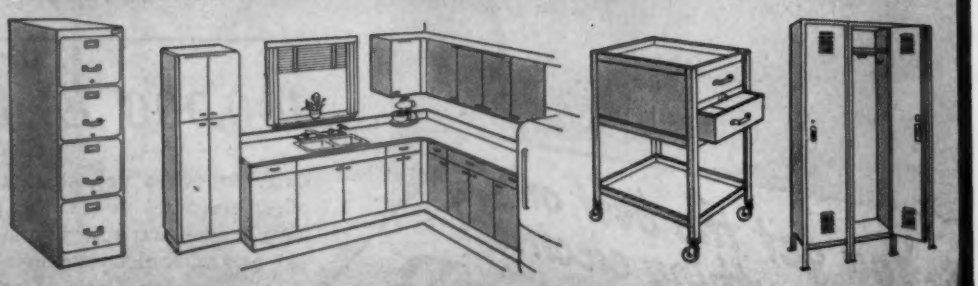
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# PURCHASING

***The National Magazine of Industrial Procurement***

VOL. 28, No. 3 MARCH, 1950



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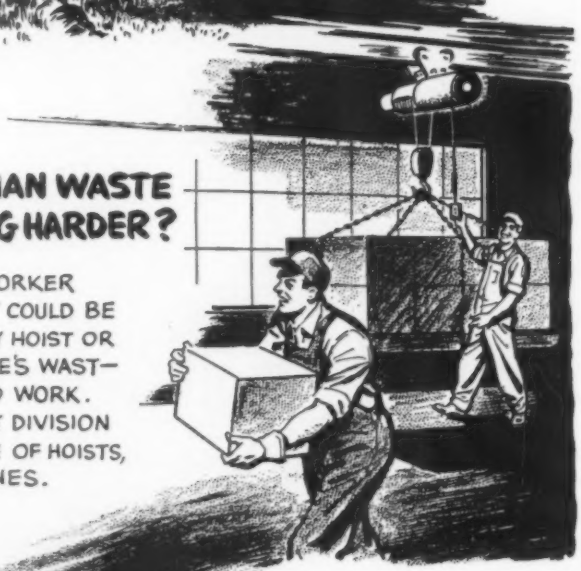
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# Fair Play for the Buyer

TRADE custom is a well recognized factor in all commercial dealings. It is one of the stabilizing elements that permits business to plan and to work according to plan.

It has long been a custom of the trade, when changes in basic steel prices are imminent, to give steel buyers a reasonable notice of the change in the preceding quarter, and to give them a reasonable opportunity for coverage up to customary schedules. In an industry where, for competitive reasons, smaller producers and fabricating mills necessarily follow the leaders in the matter of price, this is particularly important.

Failure to observe this custom in first quarter price adjustments this year resulted in confusion and caused more than a little hardship to buyers. There was a period of some weeks in which there was actually no established market level for many steel classifications, while orders were entered on a "price prevailing" basis. Cost estimates on which a considerable portion of demand was predicated, in the steel using industries, were thrown out of balance.

This is not a criticism of the price scale, but of method and timing. It is quite generally agreed that the case for price adjustment, when it was released, was an exceptionally able presentation, well documented in fact and reason. Purchasing agents, who are cost conscious in regard to vendors' operations as well as in their own, are receptive to such factual reasoning, but under these circumstances they could hardly have been expected to rally with any great enthusiasm to the support of the steel supplying industry.

Acceptance of the steel price advance in stride by industrial users would have done much to promote public acceptance of this development at a time when industrial policies, prices, and profits are under fire from a widespread anti-big-business campaign. This could easily have been achieved through the observance of a good trade custom that recognizes the common interest and the partnership of seller and buyer. As it is, another opportunity for good public relations has been lost, and many good customer relationships have been strained.

Stuart F. Heinritz

WHAT DO ALL
THESE PRODUCTS
HAVE IN COMMON?

# STAMPINGS *by* G.P.&F.

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MILWAUKEE



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# Highlights

This issue's important features summarized for the busy reader



What is the effect of living five years under a socialist government? The final article in our series of reports on conditions in Britain shows the inevitable trend in economic, business and national thinking is **Leaning to the Left.** There is a strong feeling in Britain today that the economic future lies to the east. With increasing dependence on government for employment and security, the political tendency is in the same direction, though there is no immediate danger of communism. Juggling of prices and budget figures confuses the issue, but even a cursory audit shows that the benefits and security of the socialist state are a gigantic illusion. Britain needs trade rather than aid from America. Most of all, she needs the example of a sound, strong democracy to show the way to recovery. And we need to stem the drift toward the left in this country. See page 75.

Trading in the **Futures Markets** does not give the buyer absolute price insurance or eliminate risk, but it does offer some opportunities for prudent purchasing. The article on page 72 outlines both the advantages and the limitations of buying and selling commodity futures, as applied to industrial purchasing.

**Purchasing and Salesmanship** go hand in hand. A good buyer can make a good salesman better, and a competent, cooperative salesman can help the buyer do a better job. To this end, they must understand each other's problems and work together. On page 87, a man who has worked on both sides of the desk lists some of the basic factors that each should keep in mind.



Do you buy **Springs?** Then you will find a lot of practical aid in the article on page 81, showing where the buyer can be of primary aid in cutting spring costs through cooperation with the engineers and designers of his own company and the technical personnel of the manufacturer. A check list of pertinent questions to be considered in the selection and purchase of springs is included in the article.

This month's **Guest Editorial** (page 71) is contributed by Walter Bell, NAPA Vice President for District 2. Mr. Bell points out some recent changes in the timing of purchase decisions, and factors on which they are based.

Building contractors have been slow to take advantage of the cost saving opportunities of competent **Purchasing for Construction.** The article on page 90 cites a number of interesting and stimulating examples in which alert and imaginative buyers have cut costs, solved troublesome problems, and suggested the use of new materials and methods with excellent results in this industry.

This month's Purchasing Opinion survey deals with the currently important subject of **Tariffs.** Are import duties too high? Would a tariff reduction improve our supply position on raw materials? Would it hurt our domestic industries? Turn to page 85 to see what other buyers think about these questions, and compare their answers with your own opinion.



Every trade has its own vocabulary of terms peculiar to the product and industry. Frequently misunderstandings arise and purchases are unsatisfactory because the buyer and seller do not speak the same language. The article on page 100 shows how you can do a better job of buying **Adhesives** through an understanding of their special properties, adapted to special applications, using the terms that are common to the laboratory man and the manufacturer in describing their product.

**The District 3 Conference** at St. Louis in January was packed with timely and useful information. A resume of the program, with pictures and highlights of the principal conference addresses, appears on page 111.

A large and successful manufacturing organization with several branch plants throughout the country recently revised its purchasing department to bring buying activities closer to the **Operating Level.** The story of this change and what it has accomplished for the company and for the purchasing personnel, is told on page 92. It contains some excellent ideas for every department head.

What are the real facts about the government's concern for **Small Business,** and what is being done about it? Our Washington editor (page 114) finds the biggest opportunity for little business in subcontracting.

Are you making full use of these monthly departmental features compiled especially to keep you informed on recent industrial developments? A selected list of new **Trade Bulletins and Catalogs** that are yours for the asking (page 19) and the illustrated summary of **New Products and Ideas** (page 140) will help you keep abreast of industrial progress.

# HOW TO BUY STEEL

# Using New Price Schedules

The base prices and extras recently announced by various steel mills have changed the relationship between mill prices and our warehouse prices. We also have changed our warehouse prices to encourage steel users to combine their orders into larger quantities which make possible lower warehouse prices.

To take full advantage of these changes, most buyers will want to revise their buying policy. The relationship of these mill prices to our warehouse prices has been so changed that in some cases you can actually buy from our warehouses small quantities of a size of bars, plates, sheets and strip when combined for shipment at one time to one location at less than from the mills.

FOR EXAMPLE: Based on mill prices quoted in Iron Age of February 9, an order consisting of a variety of sizes of hot rolled bars, plates, sheets and strip totaling 10 tons now costs less from warehouse than from mill if the individual items are under 1000 lbs. each.

| Product | Ryerson Warehouse Base Price F.O.B. Chicago | *Mill Base Price F.O.B. Chicago |
|---|---|---|
| H. R. Bars | 4.60 per 100 lbs. | 4.95 per 100 lbs. |
| H. R. Plates | 4.80 " " " | 5.00 " " " |
| H. R. Sheets | 4.65 " " " | 4.85 " " " |
| H. R. Strip | 4.70 " " " | 4.75 " " " |

*Note—Mill base price from Iron Age of February 9. We have added the extra for quantity under 1000 lbs.

This situation may seem paradoxical but develops naturally because of the difference between mill and warehouse operations. Steel mills producing tremendous tonnages, develop lowest possible overall costs. Small mixed orders interfere with mass production and greatly increase overall mill costs. On the other hand our steel is secured from the mills in large bulk tonnages and is sold from our warehouses to steel consumers in relatively small quantities. Our steel service plants are especially designed to handle this type of business. In fact, this method of distributing steel in small lots continues to be the most practical and economical method. Small quantities are taken from stock, cut to size, and shipped promptly. There always has been economy in concentrating orders with one warehouse source to save paper work in ordering, paying invoices, etc.

But now with present mill practices and present mill extras together with the greater warehouse price reductions for larger quantities, it is even more economical to concentrate orders with one dependable source. You are also able to keep your inventories streamlined when you are assured of quick Ryerson Steel Service.

Our sales representatives have been especially schooled on our new price structure and will be glad to show you how to buy most economically. We have printed a Base Price Folder and Extras Booklet, which make it possible to easily figure all prices. It may be well to note that we have adhered to a one-price policy throughout the years—so every Ryerson customer from the smallest to the largest is charged the same price for the same quantity.

However, if you need prices for estimating, budget or other purposes, we are always glad to help you figure, or quote to your specifications . . . and equally important, to deliver your steel when you want it, where you want it—exactly as ordered.

So if you have any problems or questions, see your local Ryerson sales representative or write for the new price bulletins.

**PRINCIPAL PRODUCTS: Bars, Structurals, Plates, Sheets, Tubes, etc. in Carbon, Alloy and Stainless Steel—All Types and Finishes**

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COMPANY _____

CITY _____ ZONE ____ STATE _____

8

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Walter L. Bell, Purchasing Agent for Tarrant County, Texas, with offices at Fort Worth, is a native of the county for which he now buys. He entered business at an early age, with a background of high school and business college training, and had acquired a wide experience in both wholesale and retail trade when he was called into the public service ten years ago.

He has been an active member of the Fort Worth Purchasing Agents Association, serving two terms as president of that organization. Currently he is Vice President of the National Association of Purchasing Agents for District No. 2, which includes the Dallas, Fort Worth, Houston, Oklahoma City, Shreveport, Tampico, Texas Panhandle, Tulsa, and Wichita Associations.

Mr. Bell is married, has a grown son and daughter and one small granddaughter, Angela Kay Ambrose. He is a member of the Methodist Church, the Masonic Lodge, the Shrine, and is an able and conscientious worker in civic affairs.

# Purchasing Decisions

● *By Walter L. Bell*

SOMETHING is happening in the field of industrial procurement. Just what it is and what its final impact on business will be has not yet been determined.

But evidence is accumulating that buying motives and buying decisions are beginning more and more to originate within a company itself rather than coming from energetic salesmanship of other companies. So noticeable is the trend that forward looking sales departments are stressing to management the necessity of pre-selling a product. They feel that their product must be favorably thought of or regarded at the very instant, or even before, buying plans are under way. They cannot wait for sales calls to move goods.

The present trend developed in three stages. First, there was the stage where the purchasing department sat back and bought only when plant necessity demanded or when some intelligent salesman convinced them of the need. The convincing could be either through the purchasing department, through other department heads, or through management executives.

The second stage came when the purchasing department talked to salesmen and agreed on purchasing or promised to take up with management the possible purchase of their equipment. Here the individual salesman reached his greatest opportunity, and consequently, his greatest efficiency.

The third stage, which we are gradually entering, puts the procurement interest running slightly ahead of the manufacturer's or supply firm's sales calls. Possible purchase plans are discussed *before* the salesman enters the picture.

What is bringing about the change?

A one word answer would be *Communication*. Information and facts about materials, products, trends, styles and results are getting through to the procurement offices of business faster than salesmen can carry the word.

The purchasing department need feel no special privilege in this. Where news of a new synthetic material used to be received from a salesman, it is now read in the afternoon paper with a wire-photo showing uses for the new product.

What is true of business news is equally true of advertising information. Quicker preparation and delivery of advertising material makes it possible for firms to rush product advantages to all sections of the country and all classes of people at one-tenth the time it took only a few years ago. In television, it is instantaneous.

Evaluating the information is a different story. And, that is where the purchasing department comes in. The department knows the application of the new material or product or machine to its company's operation and knows approximate costs. The purchasing agent has the general picture, but is not ready for specific fill-ins. For the time being, he feels that he has all the information needed—yet, during this contemplative or testing period, decisions to purchase are often made.

How will this trend toward inside purchasing decisions affect the purchasing agent?

The answer has already been given. He will have greater responsibility than ever to be alert, to be informed and to be trained to evalu-

(*Please turn to page* 290)

# How to Use the Futures Markets

**Buyers can safeguard inventory and commitment values through judicious hedging**

**Grade differentials are a serious hazard for the buyer of futures contracts**

**There is no foolproof formula for eliminating price risks and losses**

● **By Dr. H. E. Luedicke**

Executive Editor
The Journal of Commerce
New York

THERE is no such thing as "price insurance" and no such thing as a perfect hedge protection against price losses. If there were any such Utopia, purchasing agents would have known about it long ago.

There are a lot of things the futures markets can do to help the buyer, but insuring against price losses is not one of them. It is true, however, that they can help in reducing price risks considerably if used discriminately.

Whoever first described hedging as price insurance was guilty of an overstatement. And the commodity exchanges and their broker members, taking up this cue, also were guilty of overselling this function of their markets and oversimplifying the hedging function.

Unfortunately, hedging is not as simple as the economic textbooks and the literature of the commodity exchanges have it. It is a science all its own, and whoever goes in for hedging for the first time had better consult some one who specializes in giving this kind of advice. Otherwise, he might wake up one fine morning and find that, instead of getting rid of a headache, he has acquired a nasty toothache as well.

Many business men are frank to confess that they do not understand anything about the commodity futures exchanges. This is probably due to the fact that these exchanges have a language of their own which must sound like a lot of mumbo-jumbo to the outsider. There is really no need for this. Their actions and functions can be explained in words of one syllable.

Boiled right down to fundamentals, hedging is quite simple. To understand it, only one thing must be clearly fixed in your mind. *Normally*, prices in cash markets and in the futures markets move uniformly. This "normally" will give us some trouble later on, but let's accept it, for the time being, at face value. The possibility of arbitrage between the spot and the futures markets prevents them from getting out of line for any great length of time.

This parallel price movement between spot and futures markets is the basis on which all hedging operations rest. If two markets move in perfect unison — and since we are now talking economic *theory*, there is nothing to prevent us from making such an assumption — it is easy to see how we can eliminate price risk by going *long* in one of the markets and *short* in the other.

Wherever we can find two such markets moving absolutely parallel, our price risk can be effectively eliminated. Theoretically, this could be the case with two different cash markets two different futures markets, the cash and the futures market in one commodity, or the cash market in one commodity and the futures market in a related commodity. As it happens, only in the case of the cash market in one item and the futures market of a related item do we find the sort of uniform price movement that can be used as the basis for hedging operations.

It is not enough that there is an occasional parallel price movement in the two markets. It must be something that can be relied on under almost any circumstances. It must be so well established that in case there is ever a deviation, you can bet your shirt on an early return of the normal price relationship between the two markets. (In polite language, of course, you don't bet your shirt; rather, you engage in arbitrage or take a straddle position.)

Only the other day, I heard of a fellow who had found the perfect hedge to protect himself against price losses in burlap. He said he did it by hedging in silver. He had charts to "prove" that every time silver went up or down, burlap went up or down also. My own opinion about this type of so-called hedge operation is that this man was probably very lucky that trading in silver futures stopped when it did, because sooner or later his perfect correlation should have backfired. This is the sort of correlation that may work out five times in a row and then go completely askew.

Another friend of mine declared for years that there was no better indicator of the general price trend than the price of tallow. He, too, had charts to demonstrate his point. But the price of tallow certainly would have given him a bad steer in 1949. Had the general price trend followed tallow then, we would have had a second 1920-21 debacle, because tallow had a sharper postwar price drop than any other commodity.

The trick of hedging one commodity in a different market is very difficult, even when the two commodities are closely related, such as ice cream and butter, margarine and cottonseed oil, pork and lard.

Hedging is also difficult if you try to apply it to an inventory of finished goods by taking short positions in the raw material used in the fabrication of those goods. Some ex-

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Abstract of an address at the forum meeting of the Purchasing Agents Association of New York, January 17, 1950.

amples of this are the shirt manufacturer who may try to hedge an inventory in the cotton futures market, the margarine manufacturer who hedges in the cottonseed oil market, the tire manufacturer who uses the rubber futures market, the shoe manufacturer who uses the hides futures market, and the manufacturer of copper tubing who may think he can get price protection in the copper futures market.

It's one thing for these manufacturers to seek some price protection for their stocks of raw materials, but it's something else entirely when it comes to stocks of finished goods. In such instances, hedging usually becomes outright speculation on a decline in the raw materials market. There may be nothing wrong with this, if you hit it right, but it has nothing to do with hedging.

It seems to me that the chances for price protection against losses on finished goods inventories are in direct proportion to the raw material cost factor in the merchandise. The cotton content of a shirt is a relatively small cost factor. That's why shirt prices often move in the opposite direction from cotton. On the other hand, the cottonseed oil cost factor in margarine is large—around 80% of the margarine wholesale selling price. That's why hedging in that instance offers better chances for protection.

### *The Inventory Hedge*

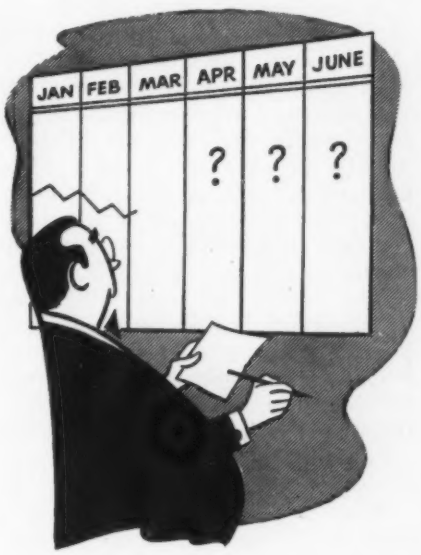
Purchasing agents would seem to be primarily interested in two different hedge situations. First of these is the inventory hedge.

Here your inventory represents a long position in the cash market of a commodity. Hence you would use a short sale of the corresponding futures market to salvage part of the inventory loss if the price of your raw materials goes down. This does not require that you keep a 100% hedged position at all times. Rather, you would use the futures markets when you think that the market does not "smell" right.

What you are trying to do in such cases is to price your raw material down to the market or to replacement costs. This is important in case your competitor has the advantage of cheaper raw materials so that he can force your company to follow suit in the reduction of finished goods prices regardless of your costs. When this occurs, a short hedge will at least give your company some profit to apply against the inventory book loss. This may not be hedging according to the textbook, but sometimes it helps.

This type of short sale in the futures market is particularly important in times of a major general price decline, when it becomes next to impossible to liquidate surplus inventory. When price declines threaten, buyers for actual materials often all but disappear. Purchasing agents are well aware of this, because they practice it. That is seldom true of the futures market, however. At a price, there almost always are buyers in the futures markets, although they are usually crucified by the Administration as "speculators".

Under such market conditions, it would be feasible to sell futures and liquidate inventory surpluses slowly, buying back the futures contracts as actuals are moved. There might be losses under such a policy, but they would be smaller than if the inventory were thrown overboard as distress merchandise. Here again, Uncle Sam's tax collector certainly would not recognize such future sale as a hedge, but you could still avoid some loss.




A good example of an opportunity for a successful inventory hedge was the rubber market prior to the devaluation of the British pound. Another good example would have been the tin market prior to the lifting of the RFC fixed price, when a sharp decline was inevitable, *if* there had been a tin futures market at that time. Actually, trading in tin futures in New York and London was resumed only a few weeks ago.

### *The Commitment Hedge*

A second type of hedging operation that may be useful from time to time is the commitment hedge. This is a long purchase in the futures market, and may be used when you think a price advance is in the making and you are afraid that producers may soon withdraw from the market until the advance is made. If you are quick on the trigger, you can perhaps move in on a futures market and buy futures before prices start going up.

This type of business is based on the experience that there is usually some one around who is willing to bet that there will be no price rise, or a smaller one than actually occurs. Once again, this is the big bad wolf—the speculator. You can't have any futures market without speculators, because you look to them when you are looking for some one to take over some of your price risks.

Another case where a purchase of futures contracts may come in handy is when your company is about to step up its production schedules and you are not ready to tip your hand either to your suppliers or to your competitors. In such cases you can buy futures first and sell them later on as the actuals are being acquired.

Here is a typical example of a commitment hedge. Imagine you are a coffee roaster, and it is your habit to make annual contracts with grocery chains at firm prices, based on the price of green coffee when the contracts are made. Everything is fine for you under such a contract as long as green coffee prices are unchanged or if they go lower.

But where would you have been with such a policy during the recent sensational advance in coffee prices? Maybe you were one of those who considered the run-up in coffee prices as a fluke, something temporary, and you gambled on an early correction in the price. You would have lost heavily, as some roasters did, because they didn't do what prudence commanded them to do: they did not hedge their forward commitments by going into the futures market to buy enough futures contracts to cover at least part of their commitments.

I am the first to admit that most of the operations just described do not qualify under the textbook definitions as simon-pure hedging. They can perhaps best be described as pseudo-hedging. They are market operations with an element of speculation. That's why they can go wrong and why they cannot be classified as "price protection". But they are instances of how purchasing agents can use the futures markets to advantage.

This point is stressed because, when it comes to hedging proper, the opportunities for the industrial

purchasing agent are rather limited. This is due to a number of reasons.

Today, some 30 commodities are traded on futures markets. Most of them are agricultural commodities such as cotton, grains, cottonseed oil, lard, coffee, cocoa, sugar, etc. The group of industrial commodities in which futures trading exists is relatively small. It includes rubber, hides, tin, copper, lead, and zinc. That is all. Trading in lead futures was resumed in January for the first time since before the war.

There is always talk of adding one commodity or another to this list, but a number of earlier experiments have failed and that is holding back new experiments. There is some talk about futures trading in burlap, print cloth, and fuel oil, but we are rather skeptical of any of these "feelers". You just can't have futures trading in any old commodity. It has to stand up under some pretty exacting tests.

In order to meet the qualifications for futures trading, a commodity must be sufficiently durable to be stored for several months at least. Warehousing should present no great problems, and public warehouse space must be available at moderate cost. There should be recognized grades, including one single grade that is sufficiently representative to be the basis for trading and for price quotations. There should be spot or cash markets for the commodity, with no one producer so large that he controls the market.

Also, there must be a certain "romance" or frequent market excitement about a commodity, because otherwise it will not attract any speculative following to a market, without which it cannot flourish.

Thus we start with the fact that among industrial commodities, other than agricultural commodities, only a very small group is traded in futures markets. But that is not all. The mere fact that organized futures markets exist in such commodities as rubber, hides, tin, copper, lead, and zinc, does not necessarily make them suitable for hedging purposes.

### *The Open Interest*

Hedging can be successfully applied only in futures markets which are broad and liquid enough so that they can absorb the placing or lifting of hedges without being thrown out of gear every time a processor, fabricator, or manufacturer wants to change his hedge position. If a market is too thin, it may prove difficult to execute a hedge sale without driving the futures market sharply lower; and, *vice versa*, if a hedger wants to buy back a short contract (because the corresponding cash market position has been liquidated), he may drive the price of the futures contract up on himself. The success of a hedge transaction depends largely on the possibility of executing the two legs of the hedge almost simultaneously and within a well considered price range.

Fortunately, the liquidity of a futures market is no longer a matter of guesswork. We now have in virtually all markets two reliable yardsticks to evaluate their liquidity: the sales volume and the amount of open contracts. The number of open contracts is called the "open interest". There was a time when much mystery was attached to these figures, but this is no longer true. We have learned to use them, and they offer valuable clues as to what is going on in the futures markets.

What distinguishes trading in securities and in commodity futures is primarily the fact that in commodity futures markets the number of outstanding long contracts must always equal the number of short contracts outstanding. In stocks, of course, this is not the case.

The reason for this is simple. What goes on in the futures markets is exactly the same as what goes on in any commodity market: some people sell, some buy. But for each quantity purchased for delivery at a future date, there must be some one who commits himself to sell for delivery at the same date. If somebody buys a contract of tin for December delivery, for example, there must be somebody on the other side of the transaction who is ready to go short of a contract of tin for December delivery. When they get together, the number of outstanding tin contracts is increased by one; the open interest has increased by one contract. On the other hand, if somebody who is short a contract of rubber for October delivery wants to buy back the contract, and somebody who is holding such a contract is ready to liquidate it, the open interest goes down one contract.

The size of the open interest determines the liquidity of the futures market. It gives you an idea of how many contracts can probably be bought or sold without upsetting the equilibrium of the market. These open interest figures are supplied regularly by the commodity exchanges, and are published every day in the business press.

The most liquid futures markets are cotton, wheat, and corn. For instance, at present the open interest in wheat is approximately 60 million bushels, or 12,000 contracts of 5,000 bushels each. In cotton, it is nearly two million bales, or 20,000 contracts of 100 bales each.

Unfortunately, the industrial futures markets are not anywhere nearly as liquid. A typical recent report of outstanding contracts shows:

*Rubber*—1,103 contracts of 22,400 lbs. each.

*Hides*—442 contracts of 40,000 lbs. each.

*Zinc*—115 contracts of 60,000 lbs. each.

*Copper*—50 contracts of 50,000 lbs. each.

*Tin*—20 contracts of 20,000 lbs. each.

Similarly, the daily sales in these markets are very small. Often there are no sales at all in some of the metals; sometimes one, or just a few; seldom more than 10 or 20. In rubber and hides, the sales run a little higher, but even in these markets, days with more than 100 contracts traded are the exception rather than the rule.

If you take these two factors together, they add up to the fact that hedging in these markets is rather a ticklish matter, because there is no reasonable assurance that hedges can be placed or lifted without pushing the price sharply in the direction you don't want it to be pushed at that particular occasion.

### *Grade Differentials*

There are times when the parallel movement between cash and futures markets, upon which hedging is based, does not always work out. Yet even this is not the most difficult situation you can run into in the futures markets if you don't watch out.

Take an example. If you use the coffee futures market, you don't just sell or buy coffee futures; you buy or sell one particular type and grade of coffee—Santos No. 4. Each futures contract is based on a special grade of the particular commodity. Usually more than one grade can be delivered, at the seller's choice, at specified premiums or discounts. But the price quoted at the exchange always refers to the basic grade, and the buyer has nothing to say about what grade he gets if he holds his contract with the intention of taking delivery on it. That is very important to keep in mind unless you want to take a chance on

(*Please turn to page 292*)

***REPORT ON BRITAIN—4.***



Britain's basic steel industry—nationalized or free?

# Leaning to the Left

This is the concluding article of a series based on first hand observation of what it means to live and work under the laborite administration in Britain. It is written some weeks in advance of the general election of February 23rd, and is in no sense a political forecast. It is rather an appraisal of the objectives and achievements of the laborite program over the past five years, the economic implications, and where such a policy and course are likely to lead.

**Egalitarian system sets a ceiling as well as a floor for Britain's living standard**

**Increasing dependence on state as employer and for economic security**

**Britain looks to the east for commercial and economic opportunity**

●

***By Stuart F. Heinritz***

WHAT is the net result of five years of laborite government in Britain? The great experiment cannot be evaluated on the basis of isolated facts; there must be a balance sheet of aims, accomplishments, methods, costs, and effects. To be more specific, let us break down the general inquiry into several of its pertinent phases. What has the laborite program done for the welfare of the British citizen? What has it done *to* the British citizen, affecting his mind and thought

as well as his physical way of life? How successfully has it met the basic economic problems that beset the nation? And where does this course eventually lead in the economic and political alignment of nations?

These questions cannot be answered separately, for they are mutually dependent on one another. Nor are the answers altogether simple. The impact of the program has varied widely in respect to different classes or groups of the population. The sharp and very evenly divided conflict of opinion, evidenced in party membership and voting, bears witness to this fact.

Shall we judge the program by the austerity of the national diet, that has been so widely publicized in virtually every report on conditions in Britain today? In this one factor alone, there is material for a long recital of hardships and apparent failure when it is contrasted with American living standards, or even in comparison with conditions found in Eire or in France, just a couple of hours over the water to the west or south. Yet there is very general agreement that millions of British workers in the lower income groups are eating better today, with all the limitations, than they did in the relatively "good" days before the war. Then, the limiting factor was their own inadequate financial position. Today, thanks to subsidies, price control, and rationing, the limiting factor is not money but the limited quantities and variety of foodstuffs that are available to the nation as a whole; of what there is, they get their share, and for millions of them this represents a substantial improvement over their former lot. You have to look backward as well as forward to make a true evaluation of results.

### *Progress Has Been Made*

The austere diet is a brave as well as a necessary policy. In itself, it is not enough to balance the nation's food deficit. But most of those with whom I discussed the subject, and for whom it represented a downgrading of living standards, counted the policy a national gain. A more liberal and varied ration is greatly to be desired, of course. "But," they said, "fewer people are really hungry today; that's progress, isn't it?"

The matter of housing does not lend itself so readily to equality of distribution, because of the basic units involved — the house and the family. Moreover, there has been a desperate need for sheer replacement of war-destroyed housing in many areas before the broader program of improving or replacing substandard housing conditions can get under way as a full-scale project. There is widespread complaint over the difficulty of securing building permits, the restrictions on use of materials, the too-frequent jerry-built construction, high building costs, and alleged discrimination in the allocation of housing projects. Yet 1½ million of Britain's 13 million families have been provided with decent living accommodations at reasonable rents.

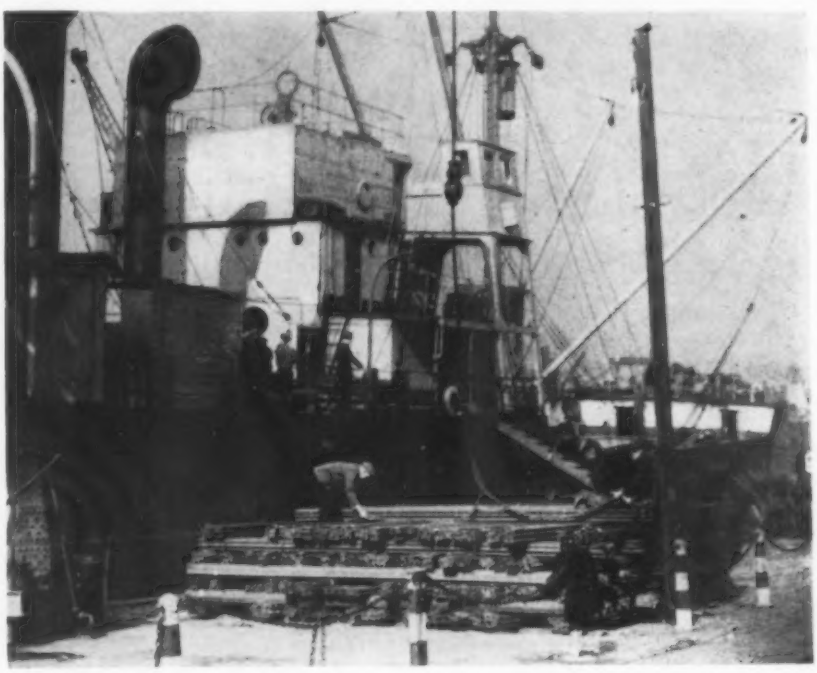
That again is progress, though there is still, of course, a long way to go. A cooperative salesman, who drove me back to the hotel in Edinburgh after a visit to a plant in an outlying section of the city, remarked: "Edinburgh is one of our showplace cities, but there are some pretty grim streets here too, if you will only look around the corner." We made a brief, depressing detour. "This will help you to appreciate how much has actually been accomplished," he explained, "as well as showing how much there is still to do."

Economic security, in the form of unemployment and sickness benefits, national insurance and retirement pensions, as well as the minimum wage, is another important gain that the working man credits to the laborite regime. Nationalized medicine is still a highly controversial issue, and is subject to many abuses on the part of both patients and practitioners. Strictly from the economic angle, it does provide necessary care which the worker formerly would have denied himself in many cases, and removes this contingency from his budget worries.

### *Two Sides of the Picture*

In these three basic undertakings, the social goals of the program are certainly commendable, however critical one may be of the methods by which they are sought or the shortcomings of the results to date. They aim to set a floor of minimum living standards that shall be available to every citizen, and thus, collectively, for the nation as a whole.

Less commendable, and profoundly discouraging, is the other side of the picture. These gains have been sought primarily through a processing of sharing, rather than creation, of wealth. In bald financial terms, this national policy of "egalitarianism" means a scale of income taxes that is not only burdensome but frankly confiscatory. Along with



**Cargo of British rails being loaded at the Bristol docks for shipment to Russia under the Anglo-Soviet Trade Agreement. Does Britain's economic future lie to the east?**

the floor, a definite ceiling has been placed on living standards, and a very low ceiling too. The income tax starts for the unmarried worker when his wages reach $14 per week, for the family man at $22. The married man with two children, earning $55 per week, turns back $10 of his wage. At $125 per week, he turns back half, and the rate rises steeply from that point on, up to 95%.

In a booklet furnished by the Economic Information Unit, Central Office of Information, published in 1949 by His Majesty's Stationery Office, the government proudly announced that there were fewer than 300 persons in the entire United Kingdom having net incomes of $14,000 or more after taxes, compared with 11,000 persons in this bracket in 1938. In the February election campaign, this figure was revised to 250 persons. Thus the policy of equal opportunity quickly and logically becomes one of no opportunity at all, and tends toward a situation in which anything substantially above the minimum standards of food and housing and security is beyond the reach of any citizen.

If such a system is to be at all workable, two basic essentials must be present—a sound basis of value and purchasing power on which reasonably stable calculations may be made for current living, and a strong governmental position to underwrite the security features of the program which are taken out of the hands of the individual.

### *Juggling the Figures*

On the first point, a hopelessly complicated auditing problem presents itself. Things are not what they seem. To maintain even a surface semblance of balance, the government planners and controllers have had to resort to a gigantic bookkeeping game of "put and take" on a nation-wide scale, with subsidies here and taxes there to make up the deficit, resulting in a completely artificial situation in which consumer prices bear no visible or logical relationship to cost and value.

For example, it is stated that £5 ($14.00) per week represents subsistence income for a family of four. In the suggested budget, the first £3 ($8.40) of this is supposed to cover food and rent. Don't try it, however, because in order to make that figure work it has to be supplemented by government subsidies to stretch the purchasing power of the pound. The food subsidy alone amounted to 1⅓ billion dollars in 1949, or $1.96 per week per family, a bookkeeping adjustment of 23.3%. Living costs are actually much higher than the price tags would indicate, and somebody has to make up the difference. It costs 9 cents to put a loaf of bread on the retail counter ready for sale; the housewife purchases it for 5¼ cents, and the rest (42%) comes out of government subsidy funds. A dozen eggs at 42¢ means a 20¢ loss to the government; a pound of butter at 21¢ means that the government contributes 21¢ more. These are published government figures.

On the other hand, you pay 16½¢ for a pint of beer that ought to cost 7¢; 24¢ for a movie seat that nets the theater 15¢; 50¢ for a 10¢ pack of cigarettes; $61 for a $50 coat.

How does one figure the real purchasing power of the pound, or the real value of anything one might need or wish to buy? When you start juggling prices and values on any such scale, there's no system of accounting in the world that will strike a balance with any meaning, no audit that will prove anything other than a gigantic illusion. The desperate hope is that the end figure will be on the right side of the ledger, but the net results thus far have been an annual deficit. How long can this go on?

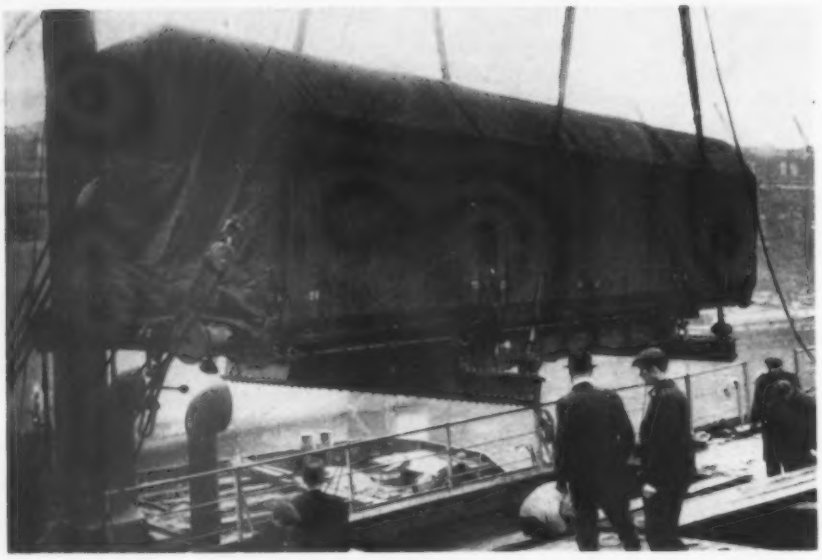
The prime example of artificial valuation, of course, was to be found, prior to last September, in the pound sterling itself. Rated at $4.20, every businessman knew that it was overvalued. Despite the temporary advantage of such a condition, many of them felt that an orderly adjustment should have been faced and made months before the staggering but realistic devaluation was forced upon the nation—a drop of 33%, to an exchange value of $2.80. Even then, the people were assured that, as a medium of exchange, the value of the pound would not be affected within the domestic economy and in ordinary trade. But it cannot be shrugged off so easily. As an importing nation, dependent on outside sources for a substantial percentage of raw materials and food, even with a minimum of dealings with dollar countries, Britain's costs have risen by about 14% for this reason alone.

### *How Secure Is Security?*

What about the soundness of the economic security programs? These benefits amount to an additional subsidy of $2.30 per family per week in direct cash payments, exclusive of the housing program. Obviously, this apparent security depends on the nation's solvency. The resources that can be borrowed through the operation of a "share the wealth" policy, in which one's gain is another's loss, have about reached their limit. And the position of dependence on the government for all economic security is becoming more compelling with every passing month. The resources of private capital are being depleted with a sharply increased inheritance tax on estates of $50,000 or more, rising to 80% on higher amounts.

**Annual weekly wage of workers in this representative steel plant amounts to $18.20. The government adds an "invisible" $4.46 in food subsidies and benefits. The head roller in this picture earns $50.40 per week, turns back about $9 in income tax.**





**Electric generating equipment ranks high among Britain's exports, but not to the United States.**

*Photographs by courtesy of British Information Services*

Under such a policy of confiscation, it is a matter of simple arithmetic to show that within a single generation, the entire population will be virtually on a current earning basis.

Does the nationalization of industry provide the answer? One immediate result of nationalization is that it tightens the grip of dependence on government. At the present stage, one-fifth of all the nation's wage earners—one ninth of total population—draw their current pay checks from the government, besides depending on the national treasury for their security benefits. This proportion will be vastly increased if and when other industries come under government ownership and operation.

This might be a workable solution if government operation were efficient and profitable. Unfortunately, this is not the case. Of seven industries nationalized to date, only three —the electric and gas utilities, and cable and wireless—show a profit balance, and this is dwindling in comparison to the record under private operation. The others merely add to the national deficit. The pattern of experience does not offer much hope in this direction. Meanwhile, the tax base is narrowed, so that the burden must fall more heavily on the individual and on remaining private enterprise.

Nationalization does provide the means for effecting full employment through government enterprises, but here again the benefit is superficial rather than real. The employment of excess personnel in government industries, and the resulting increases in cost with decreasing efficiency and productivity, are among the major reasons for operating deficits. They strike at the very root of recovery.

So we must conclude that the "security" offered to the citizen under these policies is also an illusion. Achieving results by decree, without regard to the necessary solid foundation of creating wealth by which these results must be supported, is building a house of cards.

### *Incentive Destroyed*

For anyone who believes in the incentive system of private enterprise, one of the most serious and vicious effects of the state system is the destruction of incentive in industrial leadership. This results not only from the heavy taxation and the downgrading of living standards. It is intensified by the fact that private industry must spend a large part of its effort defensively, in view of the government's monopolistic control over the basic elements of credit, fuel, power, and major raw materials, and the government's dominant role in the direction of foreign trade.

In the theory of egalitarianism, this should be offset to some degree at least by increased incentive on the part of operatives. The record of productivity and absenteeism, particularly among the lower income groups that are the greatest beneficiaries of the system, does not indicate that this has materialized. The average worker has taken the program at face value, accepting the benefits as a matter of course, but quickly losing interest at the point where he is asked to make a relatively modest contribution to the common good.

A little perspective is needed to appreciate the full implication of this system. The managing director of one firm, with whom I discussed the situation, is a registered member of the laborite party, idealistically committed to its aims and program. He has recognized the difficulties as well as the goals, and has made a conscientious effort to cooperate in every way in the operation of his own company. But he has been troubled about it ever since a Swedish industrialist gave him a friendly warning to watch how it affected the workers' own attitude, and to judge objectively whether their eagerness to produce has been enhanced or has deteriorated under the present regime. Despite his strong and sincere social and humanitarian leanings, the seed of doubt has shown disturbing vitality. This was the executive quoted earlier—"It's progress, isn't it?" The question mark at the end of that quotation is significant.

### *Basic Education Needed*

The point at which the laborite program has failed most conspicuously, and most fundamentally, is a paradox that must eventually undermine the whole structure. It has failed to educate or indoctrinate the workers themselves with the basic theory of socialism. It has failed to convince them that the only sound and permanent way to get a bigger "share" is to produce more and to produce more efficiently. Many thoughtful executives, who take the realistic view that their job as businessmen is to operate as effectively as possible under whatever set of rules may be imposed upon them at any given time, feel that socialism might work in Britain if labor itself would play the game and accept its share of responsibilities as well as benefits. But they have grave misgivings that this may be achieved.

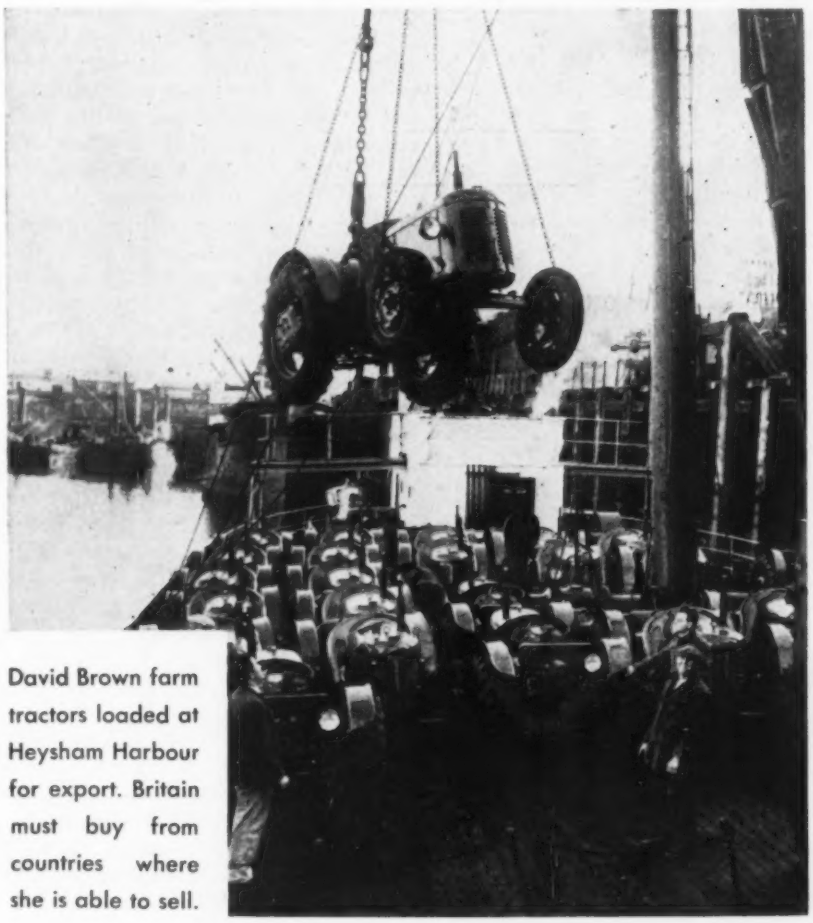
Specifically, they complain that the average worker counts only the pounds and shillings in his pay envelope, stubbornly declining to recognize the invisible increments that go to make up his real "pay packet" in the form of security and health benefits, old age assistance and pensions, and all the other social ramifications of the national and personal budget. He does not concede that he is being helped to help himself through this allocation of

income for his own and the common good. He thoughtlessly regards these benefits as his natural right, coming from some vast, inexhaustible, and slightly mysterious pool, typified by the government. He doesn't identify himself with the government, or with the necessary production of wealth to sustain that pool. So he votes the new system, but lives by the old. It's a happy combination, for him, so long as it lasts. But unless he is educated to appreciate the underlying principle of the socialist community, and to make his own whole-hearted contribution, particularly in greater productvity, it cannot last long. Meanwhile, the whole economy is in a state of rapid attrition.

The whole situation has inevitably affected British thinking in respect to international relationships, both economic and political. Basically it is a matter of competition for world trade, in which Britain, largely for reasons quite beyond her control, has yielded her prewar position of supremacy. It has been a hard adjustment to face, and a certain underlying resentment at this turn in her affairs is readily understandable.

There is an ancient axiom of business to the effect that you do not argue with success, and currently America is in the ascendancy. The American system of all-out competition and the traditional British system of industrial combines and controls are fundamentaly opposed. Yet Britons are not convinced that our system is superior, any more than we accept theirs. Despite the present turn of affairs, they can point to years, even centuries, during which their system built up an economic as well as a political empire upon which the sun never set. That experience is deeply rooted, and although the elements of the situation have been completely changed by the ravages and the cost of war, and by the rising tide of nationalism throughout her colonial empire as in the rest of the world, it will continue to dominate the business thinking of the present generation. Britain is convinced that many of her present difficulties could be solved with a little more of the "live and let live" policy in world trade.

There is resentment, too, at the devaluation of the pound, even conceding the realism and logic of the move. Though the diagnosis be sound, the doctors may disagree as to treatment. The British believe that time and medication, rather than surgery, were indicated as the means to a cure.



David Brown farm tractors loaded at Heysham Harbour for export. Britain must buy from countries where she is able to sell.

### *International Responsibilities*

Britain has always prided herself on accepting the responsibilities that go with trade domination, though her attitude has frequently been proprietary and paternalistic, and has involved more than a little exploitation. American aid is appreciated, but is regarded also as one of the responsibilities concomitant with our new position, and her own, in the changed balance of economic power. Our good fortune is regarded as being just as fortuitous as Britain's misfortune. Allies in arms, America came out of the war with a record of industry profits and a vastly expanded plant, and with self-contained material resources with which to maintain living standards and start on the race for trade; Britain emerged as a ravaged nation, with a war-worn industrial plant and stripped of her foreign assets and colonial resources. Though we may differ in our interpretations of the justice of a blind fate, there is certainly an ethical as well as an economic problem.

American aid has done much to alleviate conditions in Britain, but it has not gone to the root of the problem, which is a revival of trade. Here again, from the American viewpoint, Britain has much to do to put her own house in order in the way of efficient and competitive production. Yet it must be conceded that our record in accepting British competition is not above question.

### *Will America Trade?*

Currently reported in the press is the purchase of electric power generators by the City of Seattle for the Kagit Project. The two lowest bids were submitted by eminently reputable British manufacturers—$515,000 and $572,000. Quotations from American manufacturers ranged from $720,000 to $1,321,000. Ferranti, Ltd., the low bidder, has a fully equipped plant for service and parts in Toronto, geographically closer to Seattle than Schenectady. Yet the award was made to an American firm at a $200,000 pre-

mium, and the contract officer is quoted as saying, "I imagine we would have had considerable reaction from American manufacturers if we had accepted a British bid." It is not surprising that there were lifted eyebrows at the British Embassy, with the polite inquiry, "Do you really want to buy our goods, or don't you?" Britain lost an opportunity to earn dollars in this transaction, but America lost dollars too.

### *Looking to the East*

In one of the most illuminating and stimulating conversations I had in Britain, over a long luncheon at the Engineers Club in Manchester near the end of my stay, a gentleman whose realism, experience and judgment I came to respect very highly remarked: "Every natural tie binds us to the west. We value those ties, and are eager to continue this natural alliance even at the cost of considerable sacrifice. We are feeling that sacrifice now, but we do not complain because most of us feel that it is worth while. These are hard times, but Britain will come through them. However, I predict that history will judge this course as a serious economic error. We can't do business to advantage in the dollar markets; on some goods we can't do business with you at all. Our economic future lies to the east. We need the wheat and lumber and ores that Russia is willing to sell us, and Russia is hungry for our machinery and manufactured products."

One of the criticisms that British industrialists and businessmen have voiced against the control of trade by government is a tendency toward reluctance to doing business with certain other nations because of political differences. The businessman contends that a business transaction can be handled on a business basis, without regard to the political opinions of either party. "We need goods and we need trade. We can't eat ideologies."

### *Soviet Trade Agreement*

There is some evidence that the government too is subscribing to this view. The Anglo-Soviet Trade Agreement, now in effect for a little more than two years, is one of the important factors in British commercial activities today. A large contract for Russian lumber, announced during the course of this study, was hailed with obvious enthusiasm by several of the buyers with whom I talked.

In the light of this situation and attitude, there are two important questions to be answered. The first of these is whether or not a closer economic bond with the east would result in closer political sympathies —constituting a new "natural tie." The leftist governmental systems are all strongly motivated by economic factors. Is it possible to keep political and economic consideration strictly compartmentalized, or do they move along together? If they do, which school of thought will eventually prevail?

To this observer, the menace of communism seemed far less feared —and less real—in Britain than in our own country. British laborite socialism is a far step removed from Russian communism, and is actively opposed to that philosophy. Yet the trend toward greater concentration of power and direction of national life through state controls, that is inherent in the socialist plan and method, is more than a little step in that direction.

### *Economics and Politics*

The second question is whether American policy is helping to strengthen Britain in the democratic way, and thus to strengthen the democratic alliance, or whether it is pushing that sorely pressed nation a little farther to the left. This is particularly significant in view of the fact that we are drifting along the same course, following the British pattern with a startling parallelism of detail. Let us take care that we do not follow too far, nor fail to give heed to the warnings that are clear in her experience of the past five years.



**The tobacco tax is second only to the income tax as a source of national revenue. Government collected more than $1.75 billion on tobacco in 1949, equivalent to the combined budget for food subsidies, family allowances, and war pensions.**

There are many in America who see the "benefits" without counting the cost and are only too willing to echo, "It's progress isn't it?" There are others, more cynical and callous, who see the glib promises of state welfare as cheap vote bait. It would be well for all of these to take a more searching look and to revise the question. "It's progress. Or is it?"

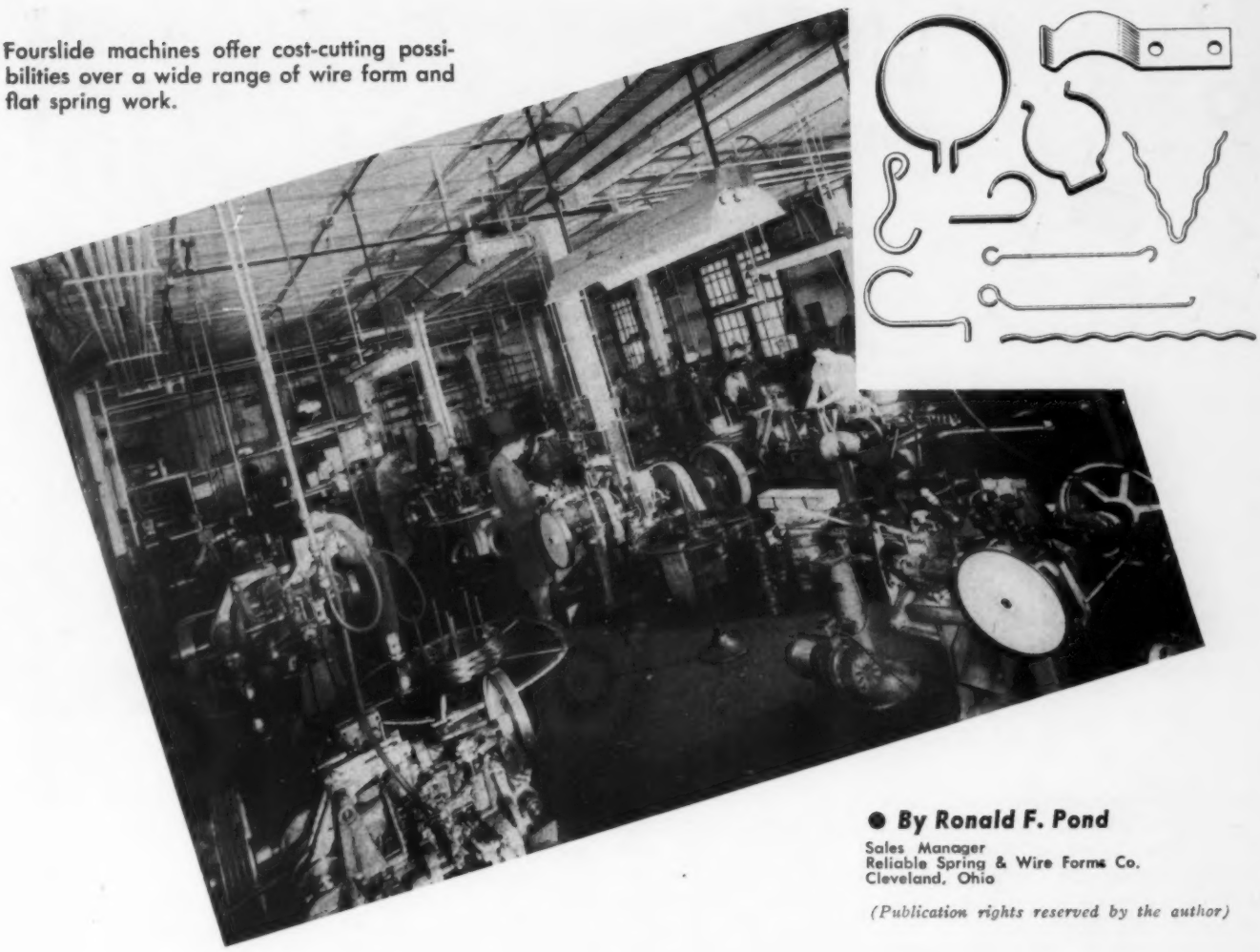
### *Private Enterprise*

It would be well for all of us to take note of the differences in our respective national situations—not to condone the abuses that can be found under our system, but to recognize humbly that through the fortunate accident of birth and geography we have the resources to live in an economy of plenty and opportunity, instead of austerity and regimentation, if we will but use our common sense to manage our heritage wisely. The critical circumstances that impelled Britain to the socialistic course are not present to motivate a similar policy here. It is highly illogical, and more than a little silly, to ape the result without the cause.

We shall do better to emulate the British loyalty to a system that has proved itself sound and successful. In our case, this is the system of competitive private enterprise.

American democracy, in business as well as in political life, does have a new and world-wide responsibility, which perhaps we have not yet recognized nor accepted to the extent we ought. Meanwhile, the first responsibility of leadership is to lead rather than to follow, to keep our democracy strong, and to set an example that will demonstrate beyond the possibility of a doubt the practical wisdom and the ethical value of following the middle course—ever forward and keeping clear of the left. For with democratic government and competitive private enterprise we have a system that offers: on the economic side, the greatest technical progress, the greatest productivity, and the greatest incentive; on the social side, the highest standard of living, the greatest liberty, dignity, and opportunity for the individual. In such vitality lies the best security.

Fourslide machines offer cost-cutting possibilities over a wide range of wire form and flat spring work.



● **By Ronald F. Pond**
Sales Manager
Reliable Spring & Wire Forms Co.
Cleveland, Ohio

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# Cost-Cut Your Spring Costs

**Cost cutting is a systematic art, based on finding the most economical design**

**The purchasing agent is the logical man to initiate a cost cutting program**

**Check list of pertinent questions for the engineer, supplier, and production man**

NO one can buy springs very long without discovering a weird trio of facts about the spring manufacturing industry.

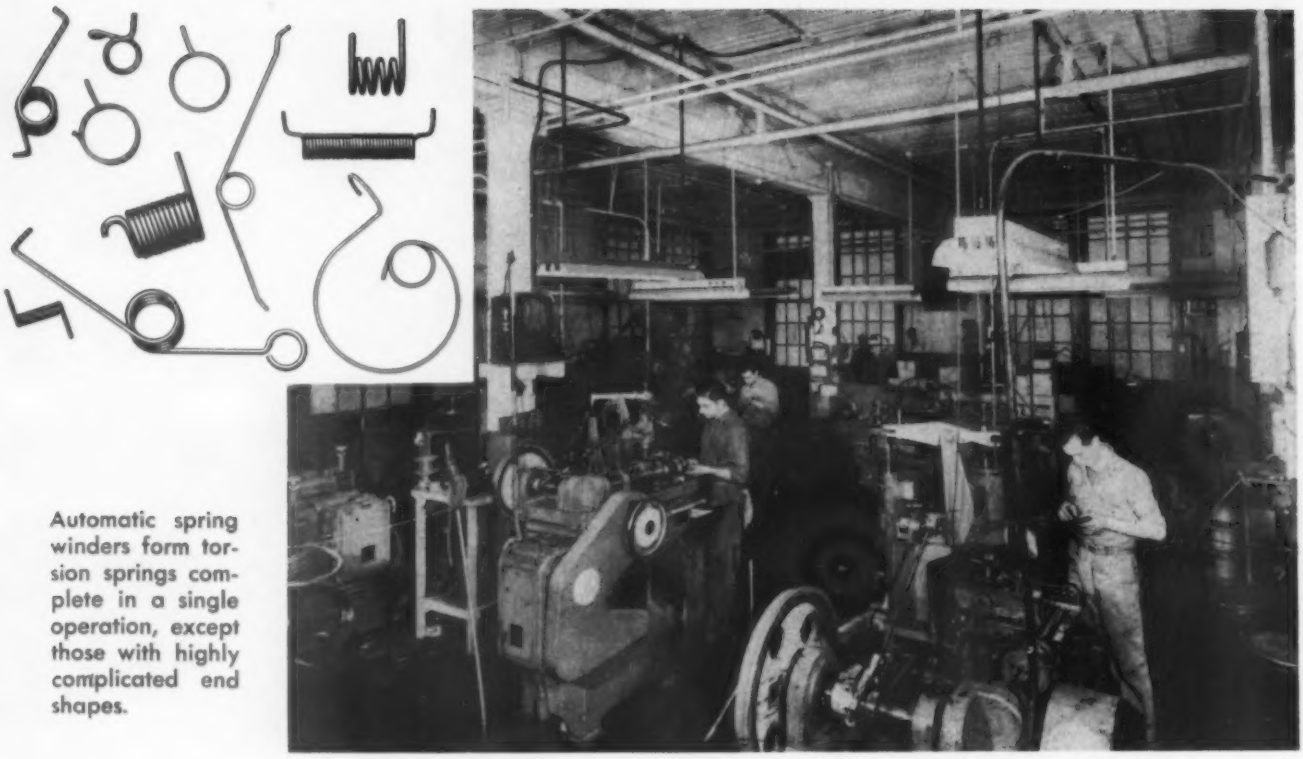
By the time a buyer has talked with fewer than six spring salesmen, he has been presented with fact number one: The principal machine tools used by all mechanical spring manufacturers are, practically speaking, identical.

Fact number two comes to light as soon as the buyer has obtained a goodly number of competitive prices. He will have received, for instance, price quotations on a given quantity of springs ranging from $5.00 per M to $35.00 per M—a ratio of one to seven.

While he is brooding over this paradox, another spring salesman may arrive who will inform him of the third fact: The sure and certain way to reduce spring costs is not to be found in simply taking advantage of competitive prices, but in the systematic practice of the art of cost-cutting.

The busy buyer may quickly decide that this last assertion is little more than a sales argument, a variation on the ancient theme: Don't buy on price alone." Supposing the buyer has had extensive experience with other manufactured articles, he can recall an infinite number of experiences with which to back up the decision that sound purchasing policy dictates that a successful bidder must simply comply with four requirements: He must have (1) the proper facilities to handle the job, (2) financial stability sufficient to carry out the contract to completion, (3) a reputation for integrity which will insure businesslike adherence to contractual details, *and* (4) his price must be the lowest submitted in that group of bidders which meets the first three requirements.

This article is not being written for the purpose of selling the idea that spring buyers should be oblivi-



Automatic spring winders form torsion springs complete in a single operation, except those with highly complicated end shapes.

ous to the advantages existing in competitive prices. Such an idea, being sheer nonsense, would immediately relegate this writing to the editor's waste basket. The fact to be developed at this point is that the importance of cost-cutting should not be obscured by the extent of apparent price advantage which can be realized from the wide range of prices often received on a given set of spring specifications.

To clarify somewhat the spring price range picture, it can be stated for purposes of illustration that this range results from, say, 3% of clerical error, 7% of differences in labor and overhead costs, 10% of differences in skill possessed by productive personnel, 5% of differences arising from capacity situations (a firm may quote with a higher than usual markup because its facilities at that time may be so heavily booked that it is unwilling to accept additional business except at prices which would justify payment of additional overtime wages), the balance of difference, or 75%, may result from the fact that over and above the standard spring machines, individual companies have built for their own use specialized machine tools which give those firms special price advantages in respect to certain unusual spring jobs. Practically all spring companies have some special equipment, giving one firm the top position in respect to one special class of work, and another firm the best position in respect to another class.

Taking full advantage of this situation, the buyer will of course buy low, in accordance with sound principles, and will often divide extensive requirements between two or more sources, in the long run securing his springs from those companies best equipped for the particular jobs he has to place.

But the buyer who stops there is doing only half the job—in plenty of instances the less important half. If a firm (in many companies thorough cost-cutting requires the cooperative effort of several departments) overlooks cost-cutting entirely, it may go on for years paying spring prices several times higher than necessary, and thereby even price its product out of the market, and yet never once buy a lot of springs at anything other than the rock-bottom competitive price.

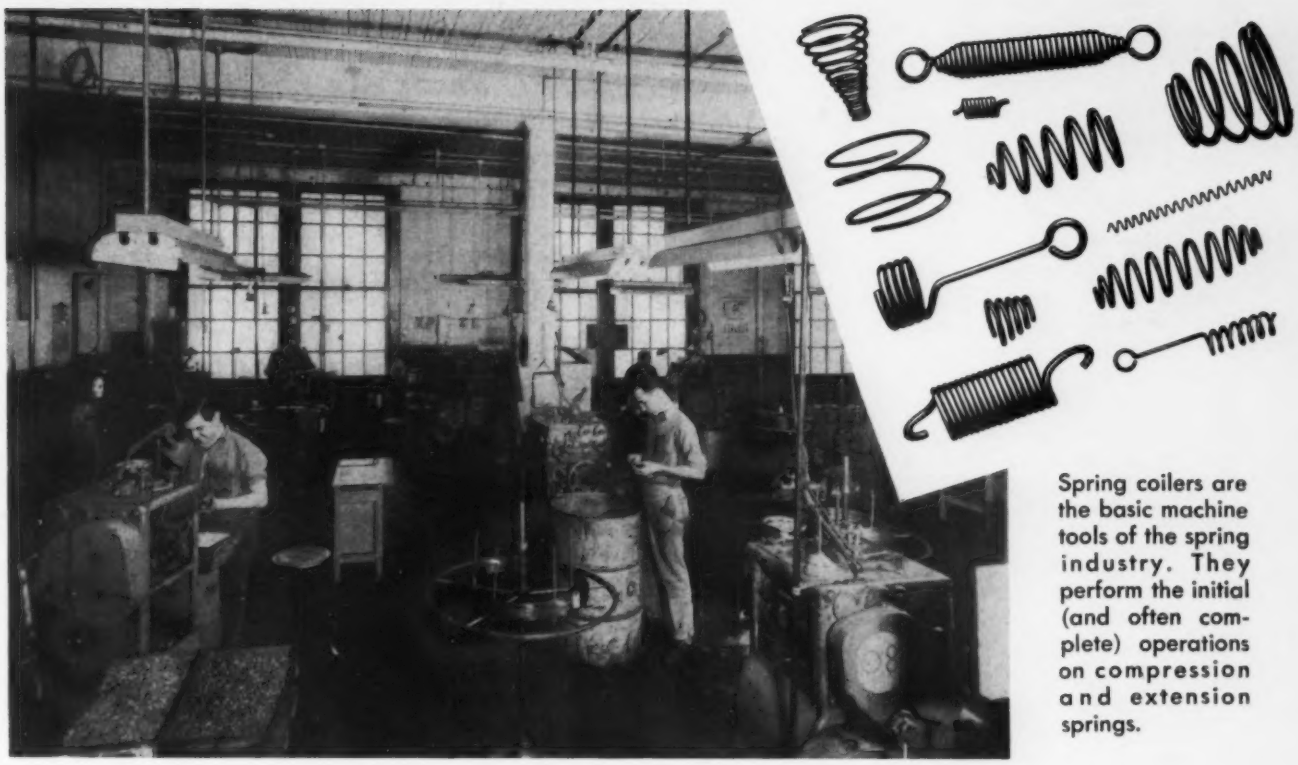
There is no doubt but that the primary reason why cost-cutting is not practiced more widely nor more consistently exists in the fact that it is a difficult, complicated, time-consuming process, often demanding the cooperation of Purchasing, Production Planning, Engineering, and various Vice-Presidents.

The Purchasing Agent can and should function as follows: First of all, he should contrive to create whatever upheaval may be required to get the backing of the Top Brass, on a basis ensuring thoroughgoing understanding and acceptance of the project by all affected parties in his organization.

After thus setting the stage, and with Engineering already reviewing specifications in a preliminary way, and Production Planning studying assembly costs, the buyer should notify his principal spring source that he needs help. The answer he gets from any reputable spring company should be cries of joy, heralding the prompt arrival in his office of a qualified Spring Sales Engineer.

Some spring users may question the necessity for such assistance. In the user's Engineering Department are men charged with the responsibility of spring design (a responsibility which rightly includes both function and cost), so why call in outside help, thereby incurring obligation? To answer, one can point to the medical profession. The average engineer has something of the status of a general practitioner, so far as springs are concerned. Which leads to the question: Why *not* consult a specialist, when his services are free?

So the buyer should arrange for a conference—or as many of them as might be needed—between his Engineers and Planners, and the spring man, with his own role now largely that of liaison man, and if need be, umpire. Logically, he could act as Chairman of the Cost-Cutting Committee. In this posi-



Spring coilers are the basic machine tools of the spring industry. They perform the initial (and often complete) operations on compression and extension springs.

tion he could exercise his wits in keeping the boys from spending too much time off on tangents, and in general try to keep the whole picture clear, and the project moving.

With Cost-Cutting now nicely in motion, it might fall to the Purchasing Agent, as prime mover and Chairman, to state the points which must be explored to obtain results. In most cases, this means a study of the individual springs to determine:

A. What parts of the specification does Engineering consider absolutely mandatory?

B. Of the remaining items on a given drawing, which ones — if changed — could result in cost reductions?

C. Can Management offer information or assurances that will reduce springs costs?

D. Can changes in springs be made that will reduce costs in the buyer's plant?

The answers to these questions, while closely interrelated, must come from different sources, which is the reason why the conference procedure is recommended. Question A obviously calls for an answer from the buyer's own Engineering Department, which is responsible for the design and performance of the product in which the spring is to be used.

The spring man should answer Question B. He should be able to state, possibly subject to confirmation by the Engineering Department at his home plant:

1. By what specification changes could the spring manufacturer eliminate operations? In developing his answers, the spring man would ask questions such as:

a. In compression springs, can grinding be omitted on springs originally specified with plain ground or squared and ground ends?

b. In compression springs subject to permanent set, can the customer accept springs not free from set, thus eliminating a pressing operation?

c. In compression springs, what is the minimum deflected length? If the spring manufacturer knows this, he may be able to determine that pressing is unnecessary.

d. In compression springs subject to permanent set, which must be furnished free from set, does space allow redesign in a larger size and larger coil diameter, permitting the spring manufacturer to furnish the part free from set without performing the pressing operation.

e. In compression springs such as those described in (d), can the solid height requirement be raised, and a minor increase in diameter arranged, so as to permit redesign in a larger wire size which will obviate pressing?

f. In compression springs such as those described in (d), is the stress level only slightly above the critical point, making it possible that pressing could be avoided by a change to a better grade of material, in which case the higher cost of the higher tensile material might be more than cancelled out by the avoidance of the pressing operation?

g. In compression, extension, and other springs, can 100% inspection to load limits be changed to spot-checking in accordance with scientific quality control procedures?

h. In compression and extension springs, can tolerance limits on length be increased so as to avoid a gauging operation?

i. In compression springs, can tumbling be substituted for reaming and chamfering of round ends?

j. In extension springs, can specially shaped ends be replaced by regular hook or loop ends, thus obviating the need for special tools and/or more than one end-forming operation?

k. In extension springs with close tolerances on both end alignment and hook openings, can at least one set of requirements be relaxed sufficiently to remove the necessity for a trimming operation?

1. In extension springs with very large or very small loops or hooks, can ends be substituted having diameters the same as that of the coil? Such substitution would remove the need for an expanding or reducing operation, in many cases.

m. In torsion springs, can special shaped ends be avoided or simplified to an extent permitting completion of the part on automatic spring torsion winders?

n. In double torsion spring applications, can single torsion springs be substituted? Generally speaking, single torsions are much cheaper to manufacture.

o. Can flat springs and wire forms having forming in several planes be simplified to eliminate operations?

2. By what changes in specifications could higher manufacturing speeds be obtained in the spring plant? This raises specific queries such as:

a. Can tolerance be widened sufficiently to place the spring in the classification that spring manufacturers term "Commercial"? In the study of tolerances, reference should be made to the Tolerance Manual recently published by the Spring Manufacturers' Association.

b. Is the spring designed with an extremely low stress level, in which case redesign to a normal stress level might reduce the number of coils to an extent that would permit a higher manufacturing speed?

c. Could a spring be redesigned to reduce appreciably, or remove the possibility of tangling, thus permitting higher speeds in secondary operations in the spring plant?

d. In extension springs, can an extremely high or extremely low amount of initial tension be changed to normal initial tension, or none at all?

3. By what changes in material can the material costs of the spring be cut? This involves such considerations as:

a. Is an expensive material being used where a cheaper material would give equally satisfactory results?

b. Does space allow redesign to a lower stress level, allowing use of the cheaper carbon spring materials, such as Hard Drawn M.B. spring wire, or Oil Tempered M.B. spring wire?

c. Can a part having a high plating cost due to proportions or tendency to tangle be made more cheaply from a pre-plated material? Would the generally lower corrosion resistance found in pre-plated wire, and lack of protection to cut-off ends, affect the usefulness of the part.

d. Is the cost of plating a part sufficiently high to warrant substitution of a corrosion resistant material as an economy move?

e. Is the deflection requirement of the flat spring or wire form sufficiently slight to permit use of low carbon (non-spring) material? Mild steel and low carbon basic wire are sometimes entirely satisfactory where spring "travel" is slight.

4. What can be done about plating costs? This subject has already been touched upon, but there are further questions to be asked in exploring this phase more completely:

a. If plating has been specified simply to prevent rusting prior to assembly, can oiling be substituted? Several excellent commercial oils are available, which are far cheaper to apply than is electro-plating. Japan is another alternate, which in some cases would offer cost savings.

b. If plating is specified for purposes of identification, will not the usually cheaper dyeing processes be acceptable?

c. Can commercial Parkerizing, or other phosphate type finishes be substituted for electro-plating where an oily black finish is not detrimental?

d. Even if the complicated design of the spring does not affect manufacturing operations or spring machine speeds, will not simplification of design, avoidance of hooks, or the closing of openings, reduce plating costs?

e. Will the specifying of a material with a better surface reduce plating cost sufficiently to offset the small "finish extra" charged by the mills?

f. Is the plating thickness specified greater than necessary?

Management policy and planning can contribute to the cost-cutting conference by considering Question C. One of the important queries to be answered here is: Can the spring manufacturer be assured of a certain minimum of production on given parts which will permit him to plan further in advance, buy his material more cheaply perhaps, and arrange for the longer runs which will spell manufacturing economy?

### *Economies in Use*

The fourth field of exploration concerns the possibility of cost reduction in the handling and application of springs in the buyer's plant. This is where the production men enter the discussion. Among the questions which could be asked at this point are:

1. Is assembly time being wasted by tangling of springs? If so, there are at least two possible ways of attacking this problem.

a. Would avoidance of tangling save enough time to offset the cost of redesign and retooling of parts and/or additional piece cost? It is possible to save by spending, in springs as in everything else.

b. Would the cost of special packaging by the spring company be offset by saving in assembly time?

2. Would design changes facilitate assembly, or eliminate the need for other parts currently included in the product?

a. Would changes in end design, which would permit the ends to snap securely over mating parts, save time in the user's plant, offsetting increased cost in the spring?

b. Could changes in spring type, from compression to extension, or from extension to torsion, for instance, simplify design or production problems encountered on other parts of the assembly?

If the foregoing outline and check list serves no other purpose, the author will be satisfied if it convinces even a few Purchasing Agents that cost cutting is a project with important potentialities. In several cases, items in the outline do not attempt to cover all possible angles of the subject, but simply point out the field to be explored. Implicit in the outline, it is hoped, is the thought that cost cutting is an art which should be pursued continually, as changes occur in other, mating parts, and as new products and springs are required. In the pursuit of this art, your spring source is in a position to help importantly. You may be sure it is anxious to do so.

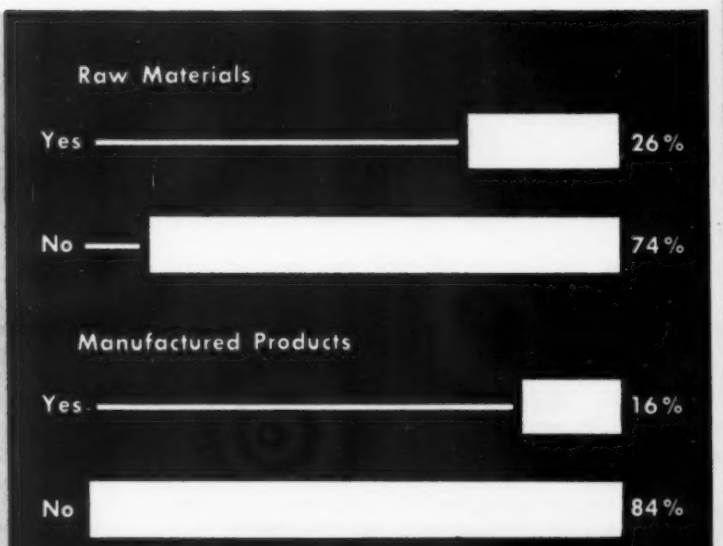
**PURCHASING** reports on

PURCHASING OPINION

# Are TARIFFS Too High?

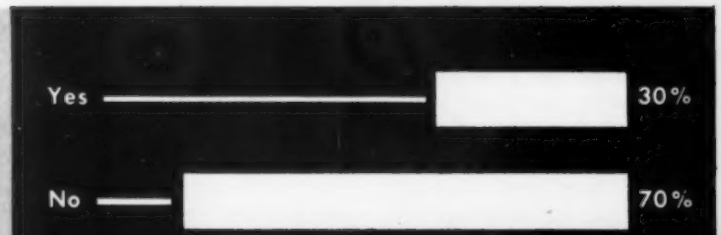
*Under the Reciprocal Trade Agreements, U.S. is to begin making a series of tariff cuts this year. Demands that tariffs be retained or increased on many items, however, are being heard from labor and industry leaders, and from legislators. Generally, higher tariff proponents say excessive imports are threatening our industries. Lower tariff advocates say reduced duties are necessary to aid world prosperity. We asked purchasing agents, vitally concerned with problems of supply and competition, for their opinions on tariffs, as to both their own positions and the general economic situation.*

**1** Would lowering of any present tariff rates improve your supply position ?




Items specified most often were steel, wool, cotton, pig iron, copper, sugar. Others included farm products, lumber, machine tools, yarns, chemicals.

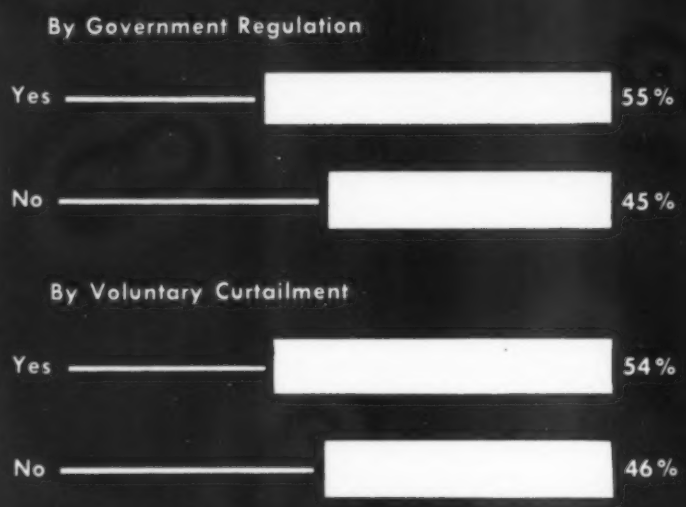
**2** Would downward revision of present tariff rates harm your company's domestic sales ?



**3** Do you consider a general reduction of protective tariffs a satisfactory method of increasing competition on those goods and materials that are produced here and abroad ?




**4** Do you believe that limiting the volume of imports would be a successful policy in dealing with cases where a domestic industry is threatened by excessive imports ?




**5** Do you feel that we must run the risks involved in tariff reductions so that European nations can achieve greater dollar earnings in American trade and thereby spend more here for American goods ?




## WHAT THEY SAY

"Since when has American business feared competition?"

"How long can we keep feeding the world with one hand and prevent the less fortunate countries from getting on their own feet with the other?"

"If we are going to send them money, let's let them work for it."

"Fear that quite often tariffs subsidize inefficiency and lack of vision and initiative on the part of management (and labor). Welfare "from the cradle to the grave" is to me the tariffs as applied to the business man, just as social benefit programs excessively carried out are to the working people."

"If tariffs are lowered it will undoubtedly hurt some industries, but I believe in the long run it will stimulate other American industries, not only because of more dollars abroad, but because of cheaper prices on some commodities in the home market."

"Think Uncle Sam should limit imports in proportion to threat to domestic production. I'm afraid voluntary curtailment would fail miserably — everyone takes care of himself first."

"We should run the risks mentioned in Question 5 and then concentrate on keeping our world leadership by advancing practical applications of science to industry."

"If it were possible to drop the Marshall Plan my answer to No. 5 would be yes. We cannot indefinitely hold up both ends and the middle."

"This is a big problem, and our best minds . . . close to the job . . . seem confused. We expected ECA to be the answer. It has fallen far short. Devaluation of the pound sterling has not done it. What will?"

"If we can get better international trade and more dependence upon each other we might have a better chance for peace."



J. E. Coleman
is responsible for the purchases of a group of gas companies serving 401,000 customers in 738 communities located in five states. He came up to his present position by way of the engineering and sales departments.

# Better Buying — Better Selling

## Good buyer-seller relationships depend on an understanding of mutual problems

## What the salesman wants of the buyer, and what the buyer wants of a salesman

## A company's success and reputation are in the hands of its representatives

●

**By J. E. Coleman**
Purchasing Agent
The Manufacturers Light & Heat Company
and Pittsburgh Group Companies
Columbia Gas System

A COMPETENT purchasing agent can help a good salesman to become a better salesman. A successful salesman can help a good buyer to become a better buyer. Both men will profit and grow in stature if they will only take the time to acquire a better understanding of each other's problems so that they can work better together.

Far be it from me to pose as an expert in selling or in buying. It happens that I was a salesman for many years. Now I am on the other side of the desk, trying to do an effective job of buying for a group of associated gas companies that have common executive offices in Pittsburgh. Therefore, I do have a first hand appreciation of the position of both the salesman and the buyer.

Both buyer and seller have certain basic desires. Their respective success is measured, to a large degree, on how well they understand and react to these desires in the everyday conduct of business.

The newer men in the selling profession quite naturally desire to acquire the skills and the know-how of the successful salesman. The old-timer in selling may also profit from an occasional self-analysis. Top sales executives are where they are today because they have consistently made available to their sales forces all ideas that will increase sales volume. An important part of this knowledge has to do with purchasing policies and practices.

Top purchasing agents, in turn, have recognized that the cooperation of well informed salesmen is among the most important assets of a purchasing department. They understand many of the salesman's problems. The alert buyer examines his methods and practices at rather frequent intervals to make sure that his department is not passing up opportunities to benefit most fully from the contacts with salesmen who are specialists in many diversified fields.

It has been said that the buyer knows a little about a great many different materials and kinds of equipment. The salesman is likewise classified as knowing a great deal about the limited number of items made or handled by his company. It is therefore to the mutual advantage of both buyer and seller to get together for a successful sales presentation.

During the war years and the recent postwar years, a sellers' market existed which, coupled with a deficiency of good salesmen, interrupted the normal relations between seller and buyer. The seller, in many cases, became essentially an allocator of scarce materials. In some cases—fortunately only a few —he became a rather arrogant allocator. The buyer, meanwhile, was interested primarily in obtaining materials, which were generally scarce. In many cases, the buyer lost his cost and quality consciousness in this chase for scarce items.

Perhaps we can blame the war for some of the poor selling and buying habits which developed in many organizations. However, if these sloppy practices have not yet been corrected, both seller and buyer should do a little self-analyzing to get back on a sound and logical business basis as quickly as possible.

It has been estimated by various authorities that the purchasing department's dollar volume of purchases amounts to somewhere between 20% and 60% of a company's yearly dollar sales. This wide range is due to the variations in the many different types of businesses. In some enterprises, the raw material and new equipment cost is proportionately high; in other firms, the labor and fixed charges on equipment may be the major costs of operating the business. In any case, the purchasing expenditures are a significant item, and sometimes the greatest single item of product cost.

This large dollar value of transactions handled by the purchasing department indicates the necessity of establishing sound purchasing procedures. Competent personnel is the most important factor in placing the purchasing department on an efficient and money saving basis.

Similarly, the vendor desiring to secure his share of available business must employ competent sales representatives.

Training, study, and experience are necessary for both the buyer and seller to reach a state of proficiency in their respective fields of endeavor. But from the very nature of the buyer-seller relationship, this proficiency and the resulting accomplishment depends to a considerable extent on an understanding of the complementary function. The purchasing agent and the salesman must learn to work together.

Tabulated with this article are a few observations on what the salesman and the buyer desire and need in the way of cooperation with one another. They are presented to help salesmen and buyers to better understand each other's problems. When a clearer understanding is reached, there will be an improved relationship between these two groups, and both will be able to do a more effective job.

One more point should be emphasized in conclusion. The pur-



## WHAT THE SALESMAN WANTS

1. *A prompt and courteous reception.* The salesman's time is valuable to himself, his company its customers. It should not be wasted by an inefficient system of handling vendors' calls. If the individual with whom an interview is desired is not available, the receptionist should inquire as to his business and direct him to the proper person to see him in the absence of the first individual.

2. *Opportunity for a fair sales presentation.* Even with a prompt reception, if the salesman is not given the opportunity for an adequate sales presentation, he feels that his call has been unsuccessful. An interview in the reception room, which may contain some of his competitors, is obviously unsatisfactory. Nor can he make a good presentation in the buyer's office if the latter is continually looking through papers or placing telephone calls. The salesman also has his responsibility; if he sees that the buyer is busy, he should make his call as brief as possible.

3. *Information on buying policies.* In some companies it may be the policy to purchase certain items through a single or very limited group of vendors, or on a policy of reciprocity. The time of both salesman and buyer will be conserved if the seller is advised of such policies on one of his first visits.

4. *Information on product use.* Some purchasing agents believe the use of a material or equipment is not the vendor's concern, so long as the buyer is willing to pay for the purchase. This is rather a short-sighted policy. Most salesmen are specialists regarding their products. If they are freely consulted, they can usually give worthwhile advice on the right materials and on proper utilization, resulting in a more satisfactory sale and purchase.

5. *Reasonable specifications.* Correct specifications define the buyer's need and allow the vendor to submit a bid truly comparable with that of another vendor. Unnecessarily strict specifications may entail higher costs. If the specifications are written to meet one particular vendor's product, even though other products may be equally satisfactory, the procedure is unfair and competition is usually eliminated.

6. *Maximum lead time.* A good salesman will do his best to secure quick deliveries to meet a customer's emergency. However, if he later finds that this special service was not required, he is likely to discount later requests and the buyer may suffer. Purchase schedules should be realistic. The buyer must consider the seller's problems and schedules as well as his own.

7. *Report on bids.* Considerable time and effort may go into preparing a quotation in response to a buyer's inquiry. The salesman is justified in asking whether the order has been placed and the reason he did not receive the business. The reason may be price, quality, delivery, or customer's unfamiliarity with the product; whatever it is, it should be stated frankly. The easy way for a buyer to dismiss the transaction, regardless of the real reason, by saying that the price was too high, is unfair to both.

8. *Access to proper contacts.* Most purchasing departments properly insist that contacts with operating personnel be made through the buyer's office. This entails a corresponding responsibility to make these contacts possible where needed. The salesman who is blocked by the purchasing department will soon by-pass the buyer, to the probable detriment of both, and business relationships will deteriorate.

9. *Report on defective material.* If something has gone wrong with a seller's production, and they haven't caught it themselves, they appreciate being promptly advised. Perhaps the defective material was confined to a single order. If a buyer simply stops purchasing his product without an explanation, the salesman feels he has not had a fair chance to prove that his company can produce a satisfactory product, and the buyer may be cutting himself off from a useful source of supply.

chasing agent or buyer is in a position to be one of his company's best salesmen or public relations officers. The treatment a salesman receives in the purchasing office is reflected throughout the trade and the community or area as the various salesmen travel and compare notes. A good purchasing department should wish its company to become known as a company that is good to work for, buy from, or sell to. And it should work toward that end.

The salesman, too, is a direct representative of the vendor company. As such, the vendor is judged by him. If the salesman is not of the highest type, the vendor suffers. A good salesman maintains and even elevates the position of the vendor in the eyes of the buyer, and eventually in the eyes of the public.

If we believe in treating the other fellow with consideration, and if we are honest in our transactions and use common sense, the problem of buyer-seller relations is placed on a sound and enduring basis. Under this condition, both the seller and the buyer will profit.



## WHAT THE BUYER WANTS

1. *Make an appointment.* When a lengthy presentation is required for full consideration of a proposal, a definite appointment permits the buyer to schedule his time so that it will not be necessary to rush the salesman, cut the interview short, or make a second call when one good interview should be mutually sufficient.

2. *Meet appointments promptly.* Lateness for appointments may cause conflict with other appointments on the buyer's schedule, including interviews with other sales representatives.

3. *Respect scheduled calling hours.* Purchasing responsibilities involve many duties other than sales interviews. Visiting hours are established particularly to take care of this situation. Late afternoon calls, unless by appointment, often prove unsatisfactory because the purchasing agent must clear the day's purchase orders.

4. *Make contacts through the purchasing department.* Most purchasing departments willingly arrange any necessary meetings with various interested individuals in the organization. By-passing the purchasing department reacts to the salesman's disadvantage. If the buyer is not familiar with a specific product, but does have a detailed knowledge of a competitor's products which may appear to offer the best buy, the order will in all probability go to the competitor.

5. *Have a planned sales presentation.* Products are sold by convincing the buyer of their merits. The purchasing agent wants to know what the product is, how it functions, and — most important — what it can do for the customer in the way of increasing production, improving quality, lowering costs, or eliminating hazards.

6. *Base selling on merit of product.* When the major emphasis of a sales approach stresses the salesman's close personal acquaintance with the "big boss", the buyer is likely to surmise that this appeal is resorted to because the product is not as good as the competition.

7. *Explain new products and processes.* All alert buyers are interested in learning about new ideas that can be applied to their business. The product or process may not be new in the trade. However, if it is unknown to the customer, it is new to him. When explained, it helps the buyer and may open up possibilities for additional sales.

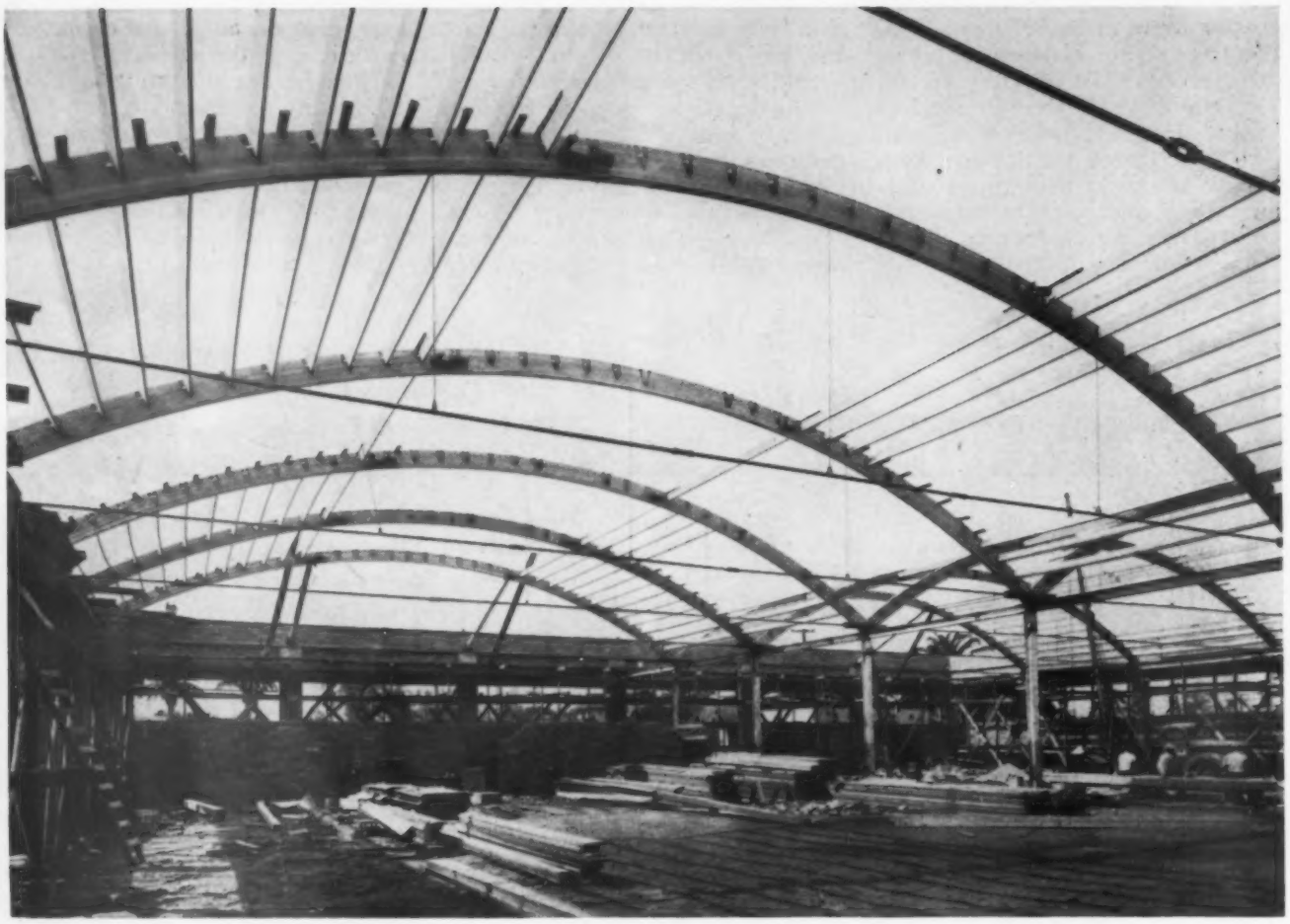
8. *Put yourself in the buyer's place.* A good salesman knows the customer's requirements and his own company's ability to satisfy these requirements. As a supplier, he is also the customer's representative. If requested material is not available, he should know if another of his company's products will serve the need, at least for an emergency.

9. *Answer requests promptly.* When a buyer requests information, the salesman should strive to secure and present it as quickly as possible. The buyer, on the other hand, should not demand extra-fast service if the matter is not really urgent. Normally, the mail is fast enough. Use the telegraph or long distance telephone only when necessary.

10. *Honest market information.* Estimates of future conditions are always subject to error, but the buyer expects honest, truthful information as a guide to wise purchasing.

11. *Fair treatment.* The buyer expects fair treatment from the vendor on price, quality, delivery, service, etc. He does not expect to get more than he is entitled to, but where volume buying justifies a lower price, he naturally seeks this advantage.

12. *Information on users of new product.* It is surprising how few salesmen take advantage of the fact that other customers in the same locality or trade are using their new products. When such information is not confidential, it will be very helpful for a prospective customer to know of similar organizations using the product. He may even ask to see it in actual use by another company.



Construction costs have been lowered through use of arched roofing beams, permitting lower side walls without reducing ceiling height.

# Purchasing for Construction

**Competent purchasing practices help keep work up to schedule and cut costs**

**New materials and alternative methods suggest large opportunities for saving**

**Buyer's role begins in the first stages, when estimates and bids are considered**

**By T. A. Dickinson**

PURCHASING for structural engineering operations is a hazardous and sometimes disastrous business, if it is a part-time occupation for more or less disinterested officials. Yet, curiously enough, only a minority of construction engineering organizations have apparently perceived the advantages of acquiring the services of specialized purchasing personnel.

Contracts are normally negotiated on the basis of standard engineering designs and current costs for both materials and equipment—with little regard for potential savings, possible price variations before a job can be completed, or alternate procedures which might be adopted to meet specifications in the event of unforeseen difficulties. Consequently, it is not unusual for construction contractors with large backlogs of work to declare bankruptcy due to inadequate financial resources in eras of comparative business prosperity.

However, a few contractors have profited from the experiences of businessmen in other fields and

established reliable sources of income from jobs that were once in the realm of speculation, simply by hiring experienced purchasing agents.

Typical of the latter contractors is Smith Construction Company of Santa Monica, Calif., where Stanley Server became the firm's first P. A. about three years ago. Server thought he was taking on a very tough assignment when he went to work for the Smith organization, since most of his experience as a buyer was gained in Southern California aircraft factories; but he soon learned that a lack of knowledge of structural work, as such, was not an insurmountable handicap.

"The company's buying routine was so disorganized," he recalls, "that I simply couldn't avoid making improvements. Most of my first month on the job was spent creating a usable set of files and a group of purchasing forms, which would minimize the difficulty of finding the best sources of supply and placing orders. This, of course, gave everybody the impression that I was nothing more than an ambitious bookkeeper; but, after I proved that my 'books' alone could save more than three times my salary each month in the purchase of building materials, I became a respected member of the team. Then, realizing that my ignorance with regard to construction work was not necessarily an asset, I started learning something about the engineering aspects of the company's business. . ."

Server is inclined to discredit the value of his files and forms, because he feels that they represent no more than routine work and could have been developed by anyone with an elementary education in standard purchasing procedures. But he's very proud of the work he has accomplished since he began to familiarize himself with structural technicalities.

For instance, he likes to remember his efforts in connection with a housing project some two years ago. Contract for this project called for the construction of reinforced brick homes, listed exacting structural requirements, and named a maximum price for the job. Then, shortly after the first foundations were prepared, the price of structural ceramic brick was increased to such an extent that finishing the project might have cost the contractor several thousand dollars. Efforts were made to obtain contract revisions, but the customer took advantage of his bargaining position and wouldn't make enough concessions to put the job on a no-loss basis. A cash bond made it impractical to halt work in connection with the housing project, and it seemed certain that the company would lose money until Server offered a suggestion: Why not make use of less expensive brick?

Veteran engineers shook their heads, telling Server that other brick were either too expensive or structurally inadequate. So Server pulled out a copy of a trade publication which he had been reading a few days previously. It contained an article describing "Bitudobe" bricks developed by a Standard Oil subsidiary, American Bitumuls Company of San Francisco. These bricks are made by mixing water and soil to produce an adobe-like mud, then adding emulsified asphalt so that they can be cast in simple wood forms. According to the article, the casts would solidify in open air and have essentially as much bearing strength, waterproofness, and fire resistance as structural ceramic brick—for only about half the cost of the latter.

A careful review of the housing contract revealed that this process would not be in conflict with the specification, so the engineers decided to investigate Bitudobe. Result: The company produced its own brick, and earned a greater margin of profit than could have been obtained even if the price of ceramic brick had not gone up!

Atkinson Construction Company encountered a similar problem recently in connection with a state contract for the leveling of Fort Moore Hill to provide space for a new Hollywood freeway in downtown Los Angeles. It seems that there was an old concrete-and-brick streetcar tunnel running through the base of the hill, and engineers thought that (because it was made without reinforcing steel) the tunnel could be caved in with an electric power shovel. But after the shovel dug down to the roof of the tunnel, they discovered that old-fashioned masonry wasn't as weak as it is generally supposed to be. So they had to find another way to destroy the tunnel.

It was impractical to use dynamite, since blasting could cause considerable damage to persons and property in adjacent business areas, and for awhile it seemed that the tunnel would have to be demolished inch-by-inch with pneumatic breakers—causing operations to become weeks, and perhaps months, behind schedule. Then an Atkinson buyer, J. A. Collins, happened to recall something he had read about a hy-

(*Please turn to page* 280)



**Demolition work in a congested area was done with speed and safety when the P. A. found a hydraulic jack suited to the operation.**



**An imaginative purchasing agent cut costs by suggesting prefabricated plywood panels for the concrete forms in bridge pier construction.**

# Purchasing Management



**How one company ties in purchasing activities with division and works management**

**Policy control and coordinated action retained in new administrative plan**

**Purchasing function gets more recognition when local management shares responsibility**

ABOUT two years ago, the Director of Purchases of a large multi-plant manufacturing company gave serious thought to a review of the organization plan of his department. The company itself is set up in several product divisions, each in charge of a Division Manager who is directly responsible to the President. The various plants—in New England, along the Atlantic seaboard, in the south and middle west—are in charge of Works Managers responsible to the respective Division Managers.

The company has been committed to the policy of centralized purchasing as a staff function serving the operating organization as a whole. The purchasing department set-up paralleled the general organization scheme, with Division Purchasing Agents responsible to the Director of Purchases, and Works Purchasing Agents at the several plants within each division. Considerable autonomy was given to the Division Purchasing Agents within the policy and procedural regulations set up at the headquarters office. The department was ably staffed throughout, and well coordinated. It is generally recognized, within and outside of the company itself, as having compiled rather an exceptional record of proficiency and performance. Among its specific original contributions to the purchasing art has been the development of a simple record form that not only provides a practical standard of evaluating departmental efficiency, but puts the finger on some of the common causes of shortcomings with the result that it has substantially improved performance, going far toward eliminating the rush orders, small orders, and short orders that are the bane of industrial buying. (See "The Time Factor in Purchasing", March 1947 issue, page 105.)

Under that system, purchasing enjoyed the complete confidence of top management. Its relationships with operating departments were generally excellent. A minimum of actual supervision by the Director of purchases was required. By every usual standard, the set-up was eminently satisfactory. Why even consider a change?

### *More Value from Purchasing*

As a matter of fact, it was this very fortunate position of purchasing that in itself prompted the Purchasing Director's thinking. As a member of the company's Operating Committee, along with other department heads and the Division Managers, he was in a position to make significant and profitable contributions to company policy, project planning and timing, above and beyond the direct administration of purchasing activities. From this top management viewpoint he asked himself what management, at all levels, should expect from its purchasing department, and how it could profit most.

Within the divisions, he found that purchasing was pretty much taken for granted as a service that was being adequately performed; Division and Works Managers, without direct responsibility for purchasing, were to a great extent losing by default some of the broader advantages that an able and well informed purchasing department could provide within the divisional jurisdiction. In other words, despite the favorable and constructive position of purchasing in the top management organization, it was *not* truly a part of management at the division and plant level. Purchasing performance, he reasoned, should be a concern of all operating executives.

He worked out a proposal for incorporating purchasing with *division and plant management* as well, by relinquishing administrative responsibility to Division and Works Managers. Purchasing was still to be centralized in each division, and coordinated in the organization as a whole. The central staff department would retain the responsibility for setting policies and would aid in setting up proper methods. It would also continue to furnish certain basic market data which was essential to its own staff functions and activities, and thus provide uniform and sound information for all divisions while at the same time avoiding duplicated effort of separate compilation. But the job of applying this information and putting the policies to work was to be a part of divisional administration.

The proposal was presented and explained at a meeting of the Operating Committee, stressing both the responsibility and the close tie-in between purchasing and management efficiency. Division and Works Managers are held accountable for results. Here was an additional effective tool for profitable operation. The plan was approved and became effective early in 1949, so that there is now a full year's experience upon which to judge the wisdom of the new arrangement.

Details of the proposal, as presented, in effect briefing the Division Managers on their new responsibilities, covered nine principal points, as follows:

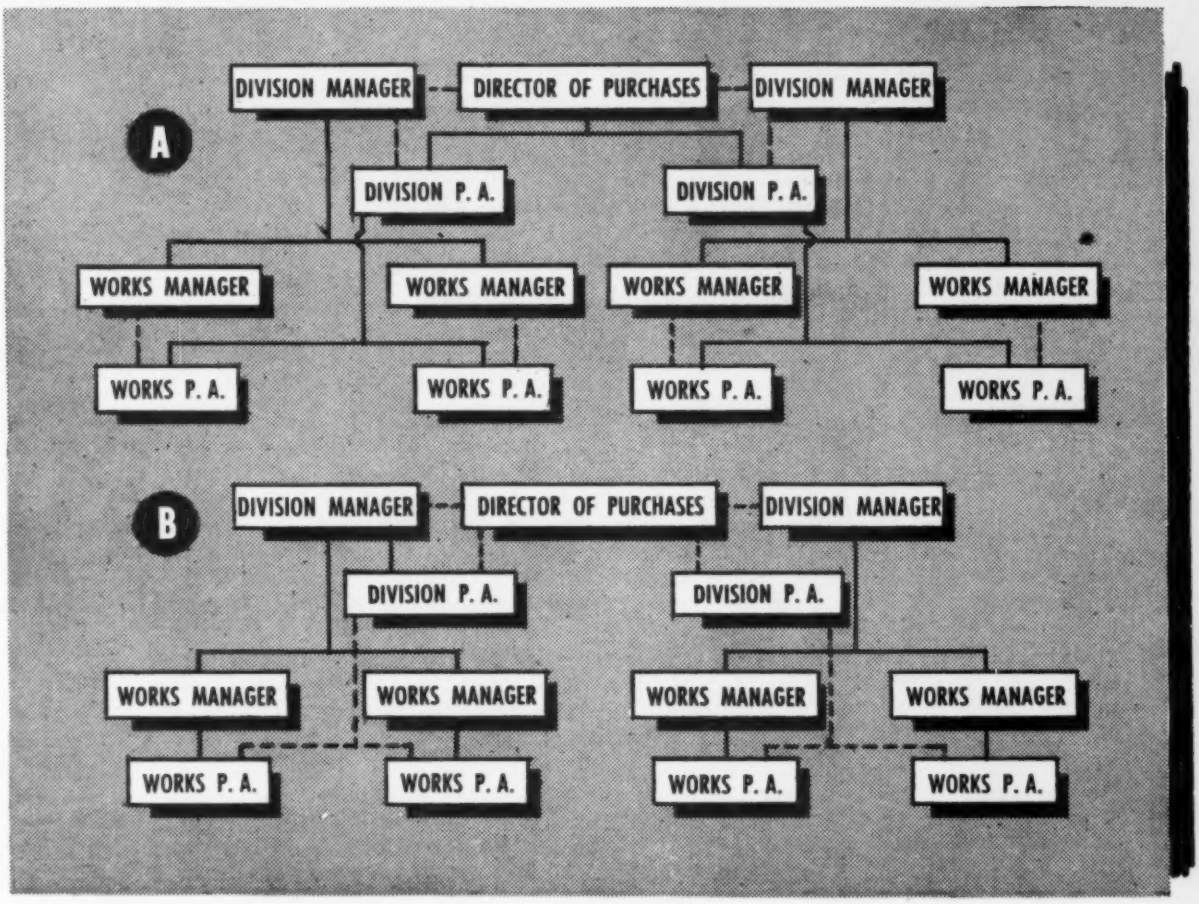
### *1 Policy*

Purchasing policy, supplied by the staff purchasing department, covers such items as:

a. Buying to be done on the basis of known current requirements, avoiding speculative inventory and commitments.

b. Recognizing that certain circumstances call for exceptions to the above policy (e.g., buying in antici-

# at the Operating Level




**"BEFORE AND AFTER" ORGANIZATION CHARTS**

**A. Strict isolation of purchasing as a staff function results in crossed lines of administrative responsibility and minimizes direct contacts of purchasing men with the operating units they serve.**

**B. When purchasing activities are tied in with divisional and works operations, the buyer is more closely connected with the management team and operating executives are more aware of purchasing factors.**

pation of strikes or other shortages, or for major construction projects), a method for such exceptions will be provided.

c. Proper procedures and records, to be uniform throughout the company's purchasing operations.

d. Development and maintenance of good relationship with suppliers.

e. Regulations governing buyers' acceptance of favors from suppliers and their representatives.

f. Reciprocity.

g. Buying to be done on the basis of firm quotations. It is a matter of concern to top management whether the company is to be known as one doing business on one firm, fair price or on horse-trading tactics.

The responsibility for making policy work in the division—and possible frequent auditing of methods and results—is a divisional function. This is the major problem in getting the new plan started. The staff department will assist in establishing the best methods for this purpose. Carrying on from there is entirely the division's responsibility.

### *II Business Activity and Prices*

Naturally, any purchasing action will depend on and vary with changes in general business conditions and prices. If a buyer expects that prices may advance, he will react quite differently in placing an order than if he expected a substantial price decline. Therefore it is important to keep all buyers informed and aware of up-to-date market and price conditions.

This is already being accomplished through the Monthly Commodity Survey mailed by the staff purchasing department to Division Managers, Works Managers, and Division purchasing departments. The important thing to consider is how to use this report to get the most out of it. The results will be in direct proportion to the time and effort spent. One thing that can be done is for individuals to look at it and, finding that they have no disagreement, to put it in the files. Obviously, this would not produce the kind of results desired.

The information provided is necessarily rather broad, but each division should interpret how it affects their operation—how important the items are *to them*, what price risks are involved, and what purchasing action should be taken.

This program should be discussed in detail by the Division Manager with his buyers.

It is not always easy to interpret the monthly commodity surveys into proper purchasing practices. There will be some cases where the right and wrong ways of handling a commodity will be obvious—what should be done and what shouldn't. In other cases this requires careful, considered judgment. The staff purchasing officer will attempt to help the divisions by keying the important items according to supply conditions and price outlook, in five categories: no price change anticipated; price may go up a little; it may go up a lot; it may go down a little; it may go down a lot.

### III Contract Policy

During the latter part of the depression, when the general price tendency was upward, we found it advantageous to sign contracts for requirements, with protection against price decline.

During the war, we signed contracts with escalator clauses, solely for the purpose of assuring ourselves of an adequate supply of the materials we needed.

This year (1949), with supply plentiful in most cases, high prices still being charged, and escalator clauses still in effect, we saw no reason for signing contracts unless there was a real, definite advantage in so doing.

These statements indicate that there is some value in having a contract policy, and that the policy will vary according to prevailing conditions. This contract policy will be supplied, yearly, with the aid of the divisions, by the staff purchasing department. From there on, the operation of the policy becomes a divisional responsibility.

It should be pointed out that management is definitely responsible for seeing that their purchasing departments understand why a policy is necessary, as well as what will happen in a buyers' or sellers' market, what happens when prices are advancing or falling, or when there are scarcities or overproduction. We hope that works management will enter into policy making and see that their respective purchasing departments actually follow this policy in an efficient manner.

### IV Small Purchases

There is a certain percentage of purchases in every division, commonly known as "chicken feed" items—small purchases having little value in themselves, but representing a substantial volume overall. Management has a responsibility in seeing that these items are purchased on an economical basis. How can this best be done?

Much thought has been given to this phase of purchasing. Spot checks can be set up that we may be at least reasonably sure that these items are being purchased on an efficient basis. Again, the staff purchasing department will help Division and Works Managers in setting up these checks; once set up, it becomes a divisional responsibility.

### V Principal Supplies

Purchasing personnel is no different from any other group. Once they find a satisfactory way to do a thing, they stick to it. Sometimes they forget that times and conditions are changing and that periodically there should be a spot check of principal commodities. Of course, only the larger items would be covered by such audits. It should be determined (1) what items should be audited, (2) how the auditing should be carried out, and (3) how often it should be done.

An outline of a representative audit, on folding cartons, was presented, and is reproduced herewith. From this example it is readily apparent that the purchasing department, the Divisional Works Manager, and the staff purchasing representative can all contribute to an audit of principal supply items, and that all three can get a good deal of useful information from it.

### VI Coordination with Sales

Thought must be given to a better method of coordinating purchasing activities with sales programs.

Too frequently we find that management, sales, or production agree to programs that are nearly impossible—or, at best, very expensive—for purchasing to produce. The closer contact of purchasing with sales and production within the divisional organization should help to avoid such situations by coordinated planning leading to joint recommendations and decisions. Division and Works Managers will see that this is made possible and carried out.

The same thought holds true with decisions on expenditures for capital items.

### VII Plant Contacts

In our sales training program, the new man is given a brief course in the plant. In educating or training apprentices, a great deal of attention has also been given to this phase. Yet in purchasing it has received very little attention.

It is very important to provide a certain amount of time for purchasing men to go into the plant and see how the materials and products they are buying are used.

For example, in replacing a worn check strap, the cost of taking off the old strap and applying the new is fully equal to the cost of the strap itself. The profit lost while the machine is down is double that amount. Obviously it would be real economy to spend twice as much for check straps if they could be purchased to last twice as long. There are many similar cases where a buyer cannot perform satisfactorily or efficiently unless he is familiar with the way products are used.

Divisional management should see that their respective purchasing departments provide time specifically for acquiring such information. Bear in mind, too, that a man can go into a plant and see a lot, without immediately recognizing its application to purchasing. Cooperation and guidance are needed. This is a divisional responsibility.

The same principle applies to visiting suppliers plants for knowledge of how the purchased items are produced.

### VIII Measuring Efficiency

We have reason to believe that our company has been a leader in the systematic measurement of routine efficiency in the purchasing department. ("The Time Factor in Purchasing", cited above.) The objective of this simple record is to find out where non-productive time has been used, to cut down this waste effort and devote the time to useful purposes. All divisions have been using this record for at least two years, some longer.

More responsibility will not rest on divisional management for the use of this record. Heretofore, the Staff purchasing department has been the major interested party, yet efficiency is or should be a divisional responsibility. Now that the historical background of routine performance has been established, it is suggested that, in each division, standards of performance should be set up. Then, when operations do not come up to the standard in any particular, some one in management should interest himself in finding the cause and correcting it before the condition becomes chronic. This can be a real contribution to efficient purchasing.

### IX In General

Purchasing is not an exact science, and it is still in process of development. Since this is the case, and it is recognized that training will produce better results, it will be well for Division Managers to draw out their purchasing men in a discussion of general principles and theories as a means of determining or developing methods for better operation. Some of the questions that might be asked in this category are as follows:

1. In a changing economy is it better to have one supplier, or two or more, and under what conditions?

2. What changes and improvements have been made in the manufacturing techniques of supplier industries? Not long ago we made a substantial saving of many thousands of dollars as a result of a special study of tin containers, through which we persuaded our supplier to purchase and install more fully automatic machinery.

Division and Works Managers can well afford to spend some time with their purchasing departments asking general questions: Why do you do this? Why not do it that way? What is the reason?

This is a program that can't be accomplished in a day, a month, or perhaps in a year. But the Staff purchasing office is anxious to work with the divisions as fast as the time can be spared, to re-align our purchase operating policy on the basis that Staff shall provide the ideas and the divisions put them into effect.

February 1, 1949

SAMPLE AUDIT

_____ Division — Folding Cartons

1) Value of purchases in 1948 $_____

2) Monthly Commodity Survey shows cartons in a weak position.
   (a) How weak are cartons?
   Supply —
   Price —
3) What is the price risk?
4) What period or date is set up as the base period, and why?
5) What is being done about "Order Quantities"?
   (a) in view of possible lower usage.
   (b) in view of possible lower prices.
6) Is "Purchase Time" down to a minimum?
7) What competition do we contact?
8) How do we feel reasonably sure we are thorough in covering competition?
9) What prices are being quoted by competition?
10) What strategy should be used?
   (a) Stick to present supplier.
   (b) Give a percentage to another supplier or suppliers.
   (a) What percent?
   (b) How many suppliers?
11) How long since size, weight of board, types of boxes, etc., have been checked?
12) Board
   Estimated 98% of cartons are made from "Bleached Manilla" board using the following calipers:
   .017" - .024" - .030" - .035"
   Balance - W.P.C. and specialties.
   Estimated that board represents 60% of cost of a carton, market fluctuating, but currently at $100 per ton.
   Board is therefore very important.
   General questions on board:
   (1) How do we follow the market?
   (2) Has the present supplier the correct board for our cartons?
   (a) quality, furnish, and finish.
   (b) Price.
   (c) Correct method of purchase. (In other words, we should check and satisfy ourselves that suppliers are buying the board they use for our boxes efficiently)
   (3) Do we check other than caliper? (N.B. - Caliper is only one measurement)
   (4) Do we have any obligation to the supplier in connection with the purchase of board?

### Results Evaluated

As stated above, this plan was adopted early in 1949. It has now been in operation over a full year and it is possible to give a preliminary appraisal of the results.

The first step, as stated, was the indoctrination of Division Managers in their responsibility for the administration and performance of purchasing activities within their respective divisions. The nine-point outline was put in memorandum form for their reference and guidance, and the Staff purchasing department stood ready to assist them besides carrying out the staff responsibilities and activities mentioned.

After a suitable interval, allowing time to set up the administrative machinery and gain the initial experience, this was followed by a conference of Works Managers, with a purchasing agenda. The discussion, questions, and interchange of opinion was evidence of a lively and intelligent interest in purchasing that had not previously been apparent when purchasing had been wholly reserved as a staff function.

The program had been initiated and announced as a plan for better purchasing. Aside from the actual purchasing performance it has resulted in making purchasing a more vital and constructive factor in management throughout the organization by making management at all levels conscious of the purchasing potential and responsibility.

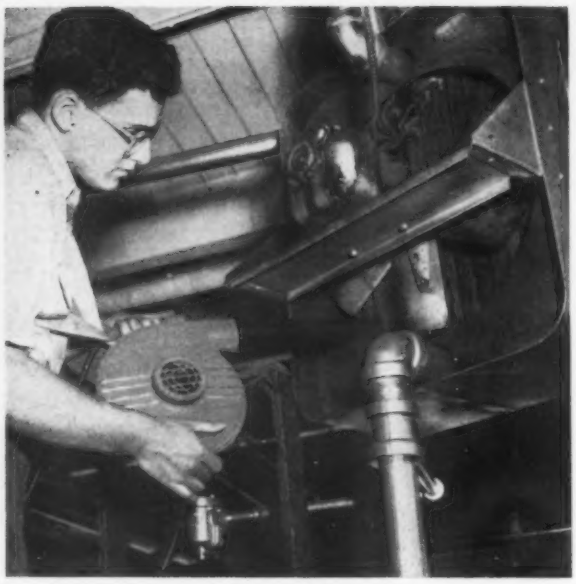
### Greater Opportunity

For the buying personnel, it has likewise proved to be a most wholesome development. With increased responsibility for independent action and accomplishment, they have developed their own abilities more rapidly than under central office direction and control. This, incidentally, is a source of much gratification to the Staff purchasing office, which looks to the building of a strong and capable staff as one of its responsibilities. Their opportunities for advancement in the purchasing organization have been enhanced, not impaired, by the change in jurisdiction.

Meanwhile, their standing in their respective divisions has been distinctly improved as Division and Works Managers have become more conscious of purchasing as a function in itself and as a management factor. These executives appreciate more fully that they have much to gain by being able to rely on informed purchasing judgment and competent purchasing performance. As a result, the purchasing agents have become bigger men at their plants and in the organization as a whole.

Purchasing serves best, contributes more, and is most highly appreciated, when it is directly associated with management at every level of company operation.





A wide variety of attachments adapt industrial vacuum cleaning to special conditions. Blower-type cleaners get rid of dust accumulations that would otherwise be dislodged by vibration.

# Modernize Plant Cleaning

**Portable mechanized cleaning equipment can simplify dust control and dirt removal**

**Work spoilage is minimized when atmosphere is kept free of dust particles**

**Place plant maintenance on a schedule basis for most effective results**

***By Paul V. Farrell***

●

MECHANIZATION, keystone of mass production, is rapidly catching up with an important related but long neglected industrial operation—plant housekeeping. And with mechanization comes the promise of lower costs, better products, and improved working conditions.

Recognition of plant cleaning as an integral part of production, and therefore a function of management, has been accompanied by the development of new equipment and advanced techniques. Industry, increasingly aware of the real value of cleanliness to successful business, is turning from its old conception of santitation and maintenance as merely a messy job to be preformed by the lowest type of labor.

Papers presented at the recent Conference on Plant Maintenance in Cleveland emphasized that smart management is devoting more time, study, and money to the problem of improving environment and operating efficiency in its installation through proper cleaning. As one speaker put it, "Management that tolerates shiftless plant housekeeping may be suspected of taking the short view of production economy and quality." The conference was held concurrently with the first annual Plant Maintenance Show, sponsored by the American Society of Mechanical Engineers and the Society for the Advancement of Management.

One aspect of the general santitation and maintenance problem receiving careful attention at the conference because of its direct tie-in to production was that of dust and debris removal from floors, pipes and overhead structures, walls, and equipment. Since it is generally agreed that labor represents from 65% to 85% of the cost of all maintenance operations, and as high as 85% to 95% in dirt removal, it is obvious that improved efficiency and greater savings in this particular field will have to come chiefly through more mechanized equipment, used in a way to take full advantage of its capabilities. Employing better type labor, at relatively high wage rates, to use antiquated methods, or employing incompetent labor, at low wage rates, to use modern materials and equipment, would simply void the advances now being made in cleaning.

Great progress has been made, particularly since the war years, in the fight againt dust and dirt by means of vacuum cleaning, mechanical sweeping, and in some cases a combination of both. The effects of

dust on fine products, on electrical equipment, in drying ovens, and on the health of employees, to mention only a few, has forced consideration of methods and machines that go far beyond the traditional use of sweeping and mopping operations, although these are still necessary in certain situations.

Perhaps the most effective means of removing dust and loose dirt from floors, walls and overhead fixtures, is vacuum cleaning. We are concerned here chiefly with portable machines, rather than the large, permanent vacuum cleaning systems which are special installations and pose a different set of problems for each particular plant. The modern portable machine is available in a wide variety of types adapted to many kinds of cleaning problems, from recovering gold dust to cleaning boilers and furnaces.

For those areas where the dirt and grime have become encrusted or "built up" on a floor and cannot be removed by suction, many firms have been turning from the slow, and very difficult manual cleaning and scraping to floor machines, equipped with a variety of accessories. These accessories include cutters for loosening the grime, and steel or fibre brushes for sweeping it into a hopper. One type of machine successfully used by a large company has a vacuum attachment that draws the dust and lighter dirt into a heavy fabric bag.

At this point it is important to re-emphasize that the purchaser of the equipment must know the problems faced in his plant, and be able to judge the ability of different kinds of machines to meet those problems. Furthermore, he must be aware of the potentialities of the machines, since new uses, particularly for vacuum cleaning, are constantly being found. He must be familiar with the aims and problems of the maintenance personnel, and the schedules and methods they follow in their work. Depending on particular plant conditions and types of management, he should be ready to aid in the establishment of planned or "program" cleaning through proper utilization of mechanized equipment.

An instance where vacuum cleaning demonstrated multiple advantages on one job occurred recently in the plant of a washing machine manufacturer. Air currents in the enamel drying ovens were blowing dust from the floor and walls onto the still wet machines, resulting in a high rate of rejects and reworking operations. The ovens were made of corrugated iron, and clearing the inside of them of dust was a laborious, time-consuming job. With the introduction of a portable vacuum cleaner to meet the problem, the dust was removed more thoroughly and rapidly and with considerably less effort. As a result, rejects and reworking operations made necessary by dust falling on the wet paint were cut by 60%.

One large manufacturing firm, faced with a double hazard in its rubber compounding department, found a solution in the use of vacuum cleaning equipment. Large batches of expensive rubber compounds were being spoiled by having dust particles fall in them. In addition, the state department of health reported that the health of workers in the department was being endangered because of the presence in the atmosphere of larger than usual concentrations of the talc used in the compounds. The area involved was considered to be regularly and properly cleaned by a man assigned to that particular job. Investigation showed, however, that the "focus of infection" was the overhead girders and walls, where dust and larger than ordinary accumulations of talc were deposited. Vibration in the building would stir these dusts, unknown to the workers or the cleaning man, and cause trouble.

When vacuum cleaning of the walls and girders was suggested, using special attachments, the sweeper through a combination of pride and familiarity with the machine refused to cooperate. The vacuum cleaning was instituted, nevertheless, and improvements in the quality of the rubber batches and in the atmosphere were soon apparent, to the satisfaction of the company, the employees, and the state department of health.

A rise of 100% in trucking effi-

(*Please turn to page* 288)







**With modern portable vacuum, sweeping, and scraping equipment, all sorts of factory floors can be kept clean without interference with normal production conditions.**

# PRICE—High or Low?

**Evaluation of competitive bids is more than a mathematical comparison**

**The low bid in dollars may also be the lowest bid in value**

**Buyer must find out what's in the price and what's behind it**

● **By J. E. Bedford** Assistant Professor of Merchandising, Armstrong College, Berkeley, Cal.

MANY people have the idea that the purchasing agent is just a human machine who buys on price and on price alone. These people, uninitiated to the complexity of the purchasing function in modern business, think that the purchasing agent just sits in his office all day receiving quotations for supplies, materials, or equipment needed for the efficient operation of his plant.

Then when all bids have been received by the various suppliers, the purchasing agent carefully sorts them out into neat little piles on his desk by the different products he wants to buy. Next he goes through each pile of bids presented by the various vendors and arranges them by price, with the lowest bid on the top of the pile. After completing this complicated shuffling procedure, the purchasing agent then writes a purchase order to the suppliers submitting the lowest bids.

Sounds simple doesn't it!

But, every purchasing agent knows that this is the "ivory tower" theory of purchasing. In practice it just doesn't work out that way—far from it.

Purchasing is complicated, challenging, and ever changing. One problem that always tests the mettle of a purchasing agent is in the purchase of special order equipment. Here the buyer is confronted with the perplexing problem: *Is the highest bid high or is the lowest bid low?*

Answering this question isn't accomplished by a mere sorting of the various bids and picking the low bid from the top of the pile. It demands a complete investigation of all aspects of the problem to find out what it is that makes prices low or high, and be sure that the lowest bid is really low, that the highest bid really is high, and why.

As a case in point, a purchasing agent received a request from the production superintendent for a piece of special order equipment. He sent out requests for quotations to five firms and received four bids by the deadline date. These four bids ranged in price from $5,000 to $8,000 on the same piece of equipment needed in the plant.

With a spread of $3,000, the purchasing agent naturally felt that the matter demanded some further investigation to see why there was this difference in price for the same equipment. He had to determine whether $8,000 was the high bid and whether $5,000 was the low bid, and have good reasons to back this up for his fellow executives in the plant.

He set up the following check list of points to be investigated before he finally decided which was the best bid for the plant to accept:

### 1.
### *Are the specifications the same on all bids submitted?*

Since all bids were submitted in answer to the same set of specifications they should have been the same. However, there is the possibility that the specifications might have been different on the final bids submitted. The specifications may have been differently interpreted. One vendor might have decided that some substitution could be made and still make the equipment equally as efficient. Or another supplier might have decided that it would require something special to provide the quality the purchasing agent would need.

### 2.
### *Do all suppliers understand the manufacturing process?*

In some cases the high bidder may anticipate some special problems in manufacturing the special order equipment and have given himself a cushion in his bid. If there is a possibility of this happening, it should be considered in the final analysis of all bids, both high and low.

Perhaps in the low bid it wasn't considered sufficiently, and the special order equipment might be delayed unreasonably so that the vendor wouldn't run his expense up too much to lose money on the order.

Or, if the high bidder has considered some technicality in the manufacture, it might be that the price could be reduced if this contingency was removed.

### 3.
### *Are the specifications clean and complete?*

This can have a strong bearing on the final bids submitted to the purchasing agent by the vendors. For instance, one vendor may assume that the bid includes the installation of the special order equipment, which will make his bid higher than his competitors.

On the other hand, another supplier may feel that the bid doesn't include any installation, but specifies just the delivery to the plant. Therefore his bid will be lower than his competitors and they both may be right in so far as the specifications are stated. But the purchasing agent's firm will have to stand the expense of installation in one case and not in the other. . . . High or Low?

**4.**

***How anxious are the bidders for new business?***

Sorting out the various bids received in answer to the specifications does not take this point into consideration. But it may have a definite bearing on the vendor's calculations. This question is one of those that adds to the complexity of the purchasing function; it requires purchasing agents who can think independently, weigh facts, and make sound decisions.

It may be that the high bidder has plenty of business and is not particularly interested in handling the special equipment order. This vendor may feel that the order is too small to fool around with, but out of courtesy and the hope of maintaining good relations with their customers they will submit a bid. They may make the bid high enough so they can either sub-let the work or handle it themselves at a good profit.

On the other hand, the low bidder may be losing money on this special order in the hope that he will be called on for more orders that will produce a profit. This vendor may feel that handling this special equipment order is a way to get his foot in the door for future business. Then the purchasing agent may feel that on future orders he owes a debt of gratitude.

Another danger of selecting the low bid if it comes from an organization that is particularly anxious for the new business is that the quality of the finished equipment may not be up to standard. This vendor may need the business and bid extremely low in order to be awarded the contract. Then he will substitute something here and there that will not show up at the time, but that may have an effect on the life of the special order equipment.

**5.**

***How have former dealings with the vendors been?***

Satisfactory dealings with a vendor in the past will sometimes tip the scales in making the decision in his favor. However, some vendors may have been resting on their laurels and as a consequence will submit a high bid. Purchasing agents place confidence in a firm that has always been fair in their past dealings, which is as it should be.

However, further investigation into the causes of any misunderstandings with low bidding vendors in the past may reveal some unknown fact that will alter the situation on the new order. This question of past vendor dealings is not passed over lightly by progressive purchasing agents because they know how vital it is in the final selection of a source of supply for special order equipment for their plant.

**6.**

***How long have the bidding vendors been in business?***

Length of life in business is not a major factor, but it does deserve some consideration from the purchasing agent. It might be that the firm has been in business for a number of years, but is now on the down grade. This is an extra factor that should be considered before the nod is given to the oldest firm in the list of bidding vendors.

However, the new firms making attractive proposals may be skating on thin ice and may not be able to make replacements or furnish service or repairs as they may be needed and called for in the original contract. Well established, soundly financed firms should provide the best source if all other points are equal. But some investigation into the newer vendors' organizations might reveal a good source of supply.

**7.**

***Do all bidding vendors have technically qualified personnel?***

On special order equipment especially, it is important to know whether the bidding vendors have the personnel that is qualified to handle the manufacture of the equipment. An investigation of the personnel of all bidding firms, with some advice by other members of the production department, might throw some light on this question and provide the key to which source would be most satisfactory.

Technically qualified personnel may be demanded, but if they aren't necessary for the special type of equipment ordered, the overhead cost of manufacture may be excessively high since part of their salaries may be included in the final bid submitted. Both sides of this question considered in consultation with qualified members of the purchasing agent's own firm will usually provide a satisfactory solution.

**8.**

***Is the time of delivery a factor in this bid?***

If time is a factor it will in all probability be included in the original specification and surely will be on the purchase order sent the successful vendor. However, time may not have been considered by all of the bidders and consequently will not be figured in the final figure presented to the purchasing agent.

Past dealings with the various vendors on this matter of making delivery as scheduled will be considered before a signed order is presented to any vendor. This might be tempered a little in light of the unusual conditions that have existed during the past few years when all delivery schedules were thrown out of kilter, but this point does bear careful consideration regardless.

**9.**

***Is the proximity of sources for service a factor?***

In some cases this question will have a strong bearing on the final selection of a vendor for some special equipment. In others it will not make much difference, and the service element may be overruled by other aspects of the problem. However, if it is pertinent, a rating of the service departments of the various vendors and their proximity to the purchasing agent's plant will prove helpful in making the final selection.

Checking over these nine questions will not uncover all of the possible causes for the wide variance in any two bids received by a purchasing agent. However, they can serve as a guide for some of the things that should be considered to answer the question: *Is the high bid really high and is the low bid really low?*

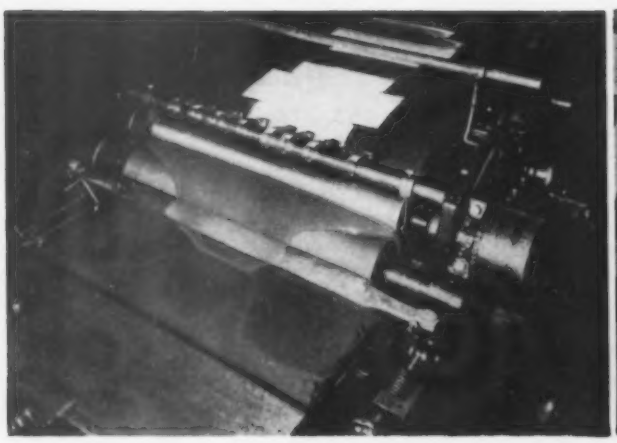
Many of these questions in the check list could be eliminated by following a few rules in making a decision on any vendor for special order equipment. Here are three rules that have been suggested that can serve as a guide all the way through the purchasing function of special order equipment:

1. Write clear, complete, and specific specifications.
2. Carefully consider the present and past standing of all vendors in the industry.
3. Consider service and repair parts availabilitv and quality.

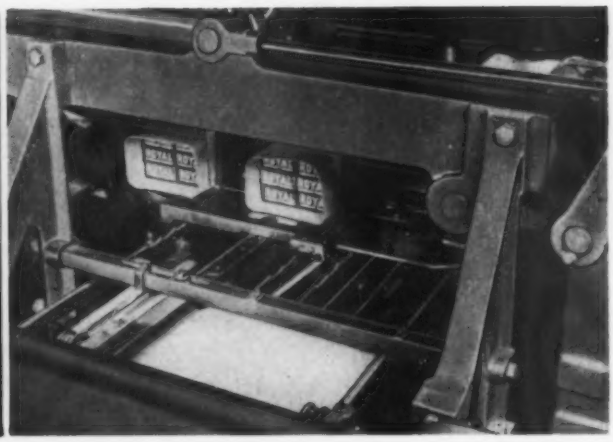
Will following these three rules make the purchasing function a matter of sorting bids into piles with the low bid on top?

No. However, it will help make the work of any purchasing agent easier, and it will produce better results for the firm he represents.

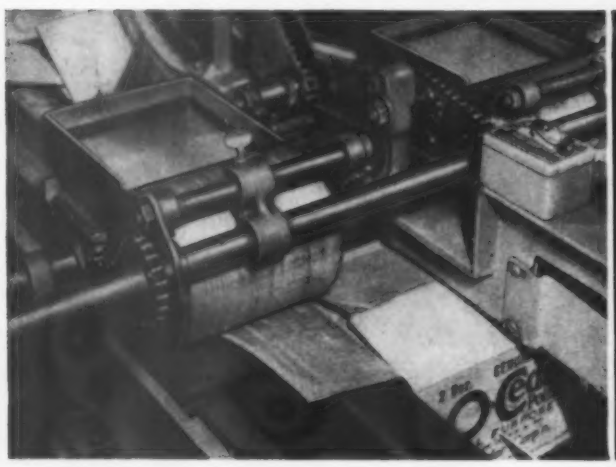
# What the Purchasing Agent should



Set-up boxes require quick-tack foamless glue.



Automatic package wrapping is a fast operation.



Heavy corrugated cartons must be sealed securely.



Paste reservoir on automatic can labeling machine.

**Four main points must be covered in defining essential properties of an adhesive**

**The laboratory, the manufacturer, and the user must speak the same language**

**A brief glossary of terms commonly used in the adhesives industry**

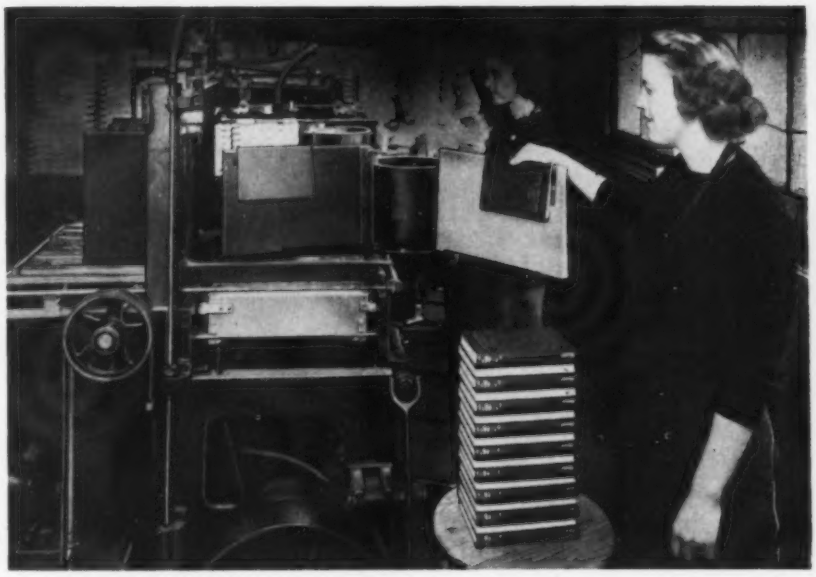
UNDER the growing pressure of competition, most industries are scouting around for ways and means to improve their plant production, packaging and sealing operations. The steady appearance of new and improved packaging materials, papers, transparent films, foils, plus faster operating automatic wrapping, sealing and fabricating machinery, calls for brand new imagination and know-how in handling, specifying or procuring glues, pastes, resin cements and adhesives, and similar chemical products for all industrial requirements.

The purchasing agent for a firm that employs adhesives as an integral part of factory production must be qualified to interpret the requirements of his production department into language and specifications that are understood by the adhesive manufacturer. It is necessary for the purchasing agent to speak the same language as his own operating department. The adhesive manufacturer's salesman must be conversant with his own technical department requirements as well as those of his customer.

Whether it is in answer to a complaint or submission of a new product, every report returned to the purchasing agent for more information means a loss of time to all concerned. An improper adhesive recommended to a customer by an adhesive manufacturer, due to a misunderstanding between a purchasing agent and the supplier can

# know about ADHESIVES

● **By Edward Bearman**
Adhesive Chemist, Paisley Products, Inc., Chicago, Illinois



Pasting end fly-leaves in bookbinding. A non-warp paste is needed.

often be traced to the lack of complete information transmitted to the purchasing agent by his own factory department.

With these facts in mind, it may be of real help to many buyers to have a brief review of some terms used in the adhesive industry; first, for its value in clearing up any doubts as to the meaning of certain expressions, and second, for impressing on all of us the necessity of taking pains to transmit accurately and intelligently what is in our minds to the minds of our coworkers.

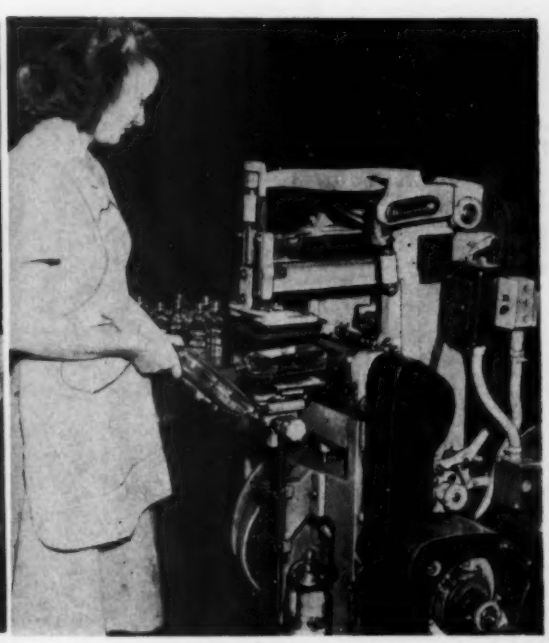
In describing an adhesive or adhesive operation there are four main points which must be covered. These are the chemical, physical, adhesive, and mechanical elements. We are deliberately not calling any one of these more important than the others, because that will depend on the particular problem. Under these categories we can place the terms we commonly use in our industry.

Let us first consider the so-called chemical properties. Is the plant now using or do they propose to use a starch, dextrine, natural gum, animal glue, casein, resin emulsion, or thermoplastic adhesive? Must the bond produced be resistant to grease, water, chemicals, and/or wide variations in temperature? Will a high or low pH cause staining? Is toxicity a factor?

The expression pH has recently come into very widespread use. The pH of a product gives us an estimate of its comparative acidity or alkalinity. On the pH scale the number 7 is taken as the neutral point. All numbers above 7 represent an alkaline condition and those below 7 an acid condition. If a customer requests a pH range of say between 7 to 8, it means that he wants a product that is either neutral or slightly alkaline. The pH scale is generally used only for water-borne materials.

Further in respect to chemical properties, it will be well to point out that the terms "waterproof" and "water-resistant" should be used with care. "Waterproof" is an absolute term. A product is either waterproof or not waterproof. "Water-resistant" is a relative term, and adhesives may exhibit different degrees of water-resistance. Furthermore, an adhesive may show a





Adhesives for labeling bottles, paper to glass, are applied manually, semi-automatically, or by fully automatic machines.

high degree of water-resistance when used for bonding manila paper, but may be only negligibly water-resistant when tested on wet strength kraft. Thus the nature of the materials being bonded is of prime importance when the factor of water-resistance is considered. Any requests for water-resistant adhesives should include data on the immersion tests to which the final assembly will be subjected.

### *Physical Properties*

The physical properties of an adhesive refer to its outward appearance. Is it heavy or thin, pasty or free flowing, brown or white, opaque or clear? We might also include in this category, the terms paste, glue, cement, solution, and emulsion.

Resin emulsion adhesives are assuming a larger and larger role in all industries. In simple terms, an emulsion is a mechanical mixture of two or more substances which are not normally compatible. Thus, we can dissolve polyvinyl acetate resin in acetone solvent and form a clear cement or solution, because acetone is a solvent for polyvinyl acetate resin, the same as water is a solvent for sugar. On the other hand, if we try to dissolve polyvinyl acetate in water by normal methods, we would not be successful. This would be comparable to the idea of dissolving oil in water. However, by mechanical and other means it is possible to break the resin into such small particles that a stable dispersion or emulsion in water can be formed. When the emulsion dries, the film will not redissolve readily in water. Although resin emulsions are white and opaque, it would be well not to refer to all adhesives with these characteristics as emulsions, because many types of vegetable products have a similar appearance.

### *Mechanical Properties*

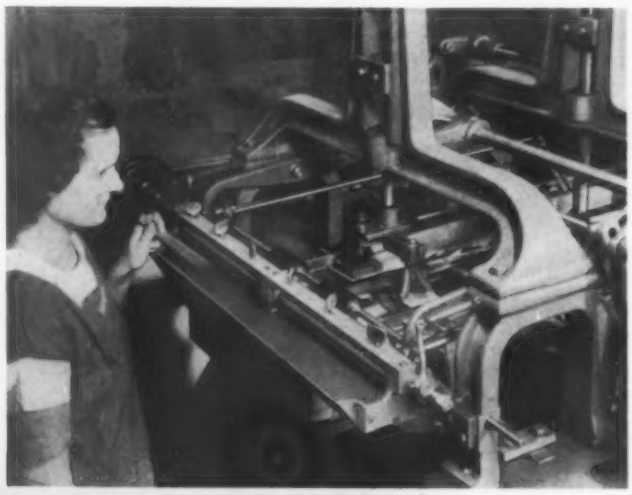
Mechanical properties include those factors which are significant when the adhesive is applied by automatic or semi-automatic equipment. Is it a single or double roller or stencil applicator? Can stringing or cottoning be tolerated? Is "throwing" a factor? Must the adhesive be fast or slow setting? The element of temper is also of great importance. "Temper" refers to the length of time the adhesive maintains its tack, and is of vital significance when there is an appreciable lag between the time the adhesive is applied and the surfaces are joined.

### *Adhesive Qualities*

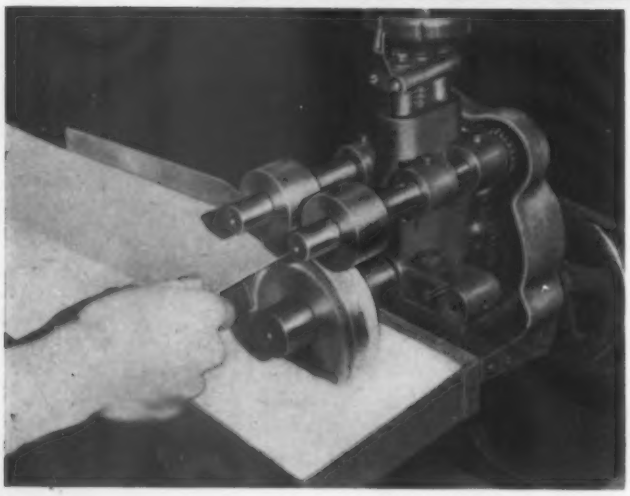
Our fourth and last point is the so-called adhesive or sticking quality. On first consideration it may seem superfluous to discuss the sticking qualities of an adhesive. Either it sticks or it doesn't stick. However, we must differentiate between initial and the final adhesion. Furthermore, is a self-sealing or pressure sensitive glue film desired? What mechanical stresses must the wet and dry bond withstand?

One of the chief causes of misunderstanding between the laboratory and customers is the fact that frequently no distinction is made on test reports between initial and final adhesion. We in the laboratory are at a loss what to recommend if we are given a report which states "Glue #so-and-so does not stick. Send another sample." Does the user mean the cartons or bags came apart as soon as they left the machine, or two days later? Is it a question of the adhesive not having sufficient tack or suction to hold the assembly together until dry, or will the adhesive fail even if adequate pressure is applied? On a carton sealing operation of clay coated board, the adhesive may hold the carton securely closed for several hours before the flaps open up. If the report came back to the laboratory that the "glue does not stick" without any distinction being made between initial and final adhesion, the chemist might be confused as to (1) whether to submit a faster drying, tackier adhesive, or (2) work on the idea of increasing the penetrating power on the clay coated board, or (3) work on both speed and penetration.

There are a number of additional terms in common use, that might have been defined in this summary. We hope, however, that we have emphasized the point that considerable confusion can arise if the adhesive supplier and user do not express themselves in language and terms having the same meaning to both of them. We are sure that efficiency of all departments will increase measurably if each of us makes a conscious effort to learn and to use commonly understood and well defined terms in describing adhesives and adhesive operations.



**Brightwood machine, showing glue box and applicators.**

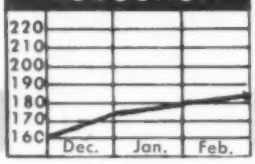


**Edge gumming machine used in carton manufacture.**

# Where We Stand

## Today's Business Trends As Reported In Current Statistics

### PRODUCTION



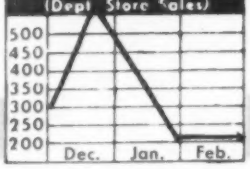

| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|---|---|---|---|---|---|---|
| Industrial Production Index | 1935-39=100 | 182 (est.) | 177 | 191 | + 2.8 | — 4.7 |
| Steel Production (Weekly) | 000 net tons | 1,729 | 1,810 | 1,843 | — 4.4 | — 6.2 |
| Electric Power Production (Weekly) | mil KWH | 6,062 | 5,695 | 5,692 | + 6.4 | + 6.4 |
| Bituminous Coal Production (Weekly) | 000 net tons | 2,500 | 5,630 | 11,385 | −55.5 | −78.0 |
| Auto, Truck & Bus Output (Weekly) | units | 120,223 | 118,588 | 95,507 | + 1.4 | +25.9 |
| Petroleum Output (Weekly) | 000 bbls. | 4,883 | 4,865 | 5,454 | — 0.4 | —10.5 |
| Engineering Construction (Weekly) | 000 $ | 175,292 | 184,814 | 127,101 | — 5.1 | +37.9 |

### PRICES




| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|---|---|---|---|---|---|---|
| All Commodities (BLS) | 1926=100 | 151.6 | 151.4 | 157.0 | + 0.1 | — 3.4 |
| Farm Products | 1926=100 | 157.2 | 155.3 | 163.2 | + 1.2 | — 3.7 |
| Metals & Metal Products | 1926=100 | 169.3 | 169.5 | 175.8 | — 0.1 | — 3.7 |
| Building Materials | 1926=100 | 191.2 | 190.3 | 200.9 | + 0.5 | — 4.8 |
| Steel Billets (Pittsburgh) | net ton | $53.00 | $53.00 | $52.00 | 0 | + 1.9 |
| Steel Scrap, heavy melting, Pitts. | ton | 31.35 | 29.75 | 38.75 | + 5.4 | —16.5 |
| Copper, electrolytic | lb. | .18 ½ | .18 ½ | .23 ½ | 0 | —21.3 |
| Cotton, mid. 15/16" | lb. | .3310 | .3174 | .3356 | + 4.3 | — 1.3 |
| Rubber (Rib-smoked sheets) | lb. | .19 ¼ | .18 ¼ | .18 | + 5.5 | + 6.9 |
| Wheat, No. 2 | bu. | 2.54 ⅛ | 2.50 ⅜ | 2.50 ⅜ | + 1.5 | + 1.5 |

### TRADE (Dept Store Sales)




| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|---|---|---|---|---|---|---|
| Dept. Store Sales Index (Fed. Res.) | 1935-39=100 | 227 | 205 | 229 | +10.7 | — 0.9 |
| Commercial Failures (Dun & Bradstreet) | no. | 199 | 207 | 145 | — 3.9 | +37.2 |
| Freight Carloadings | cars | 612,524 | 506,947 | 721,507 | +20.8 | —15.1 |

### FINANCE

| | | | | | | |
|---|---|---|---|---|---|---|
| Stock Prices (Standard & Poor's) | 1926=100 | 137.2 | 133.1 | 122.3 | + 3.1 | +12.2 |
| Bank Clearings (New York) | mil $ | 7,670 | 7,319 | 6,538 | + 4.8 | +17.3 |
| Federal Reserve Credit | mil $ | 18,146 | 18,644 | 22,836 | — 2.7 | —20.5 |
| Currency in Circulation | mil $ | 26,985 | 27,311 | 27,557 | — 1.2 | — 1.1 |

# MANUFACTURERS' SALES, AND INVENTORIES

**Value of Manufacturers' Sales**
**Seasonally Adjusted**
**(Millions of Dollars)**

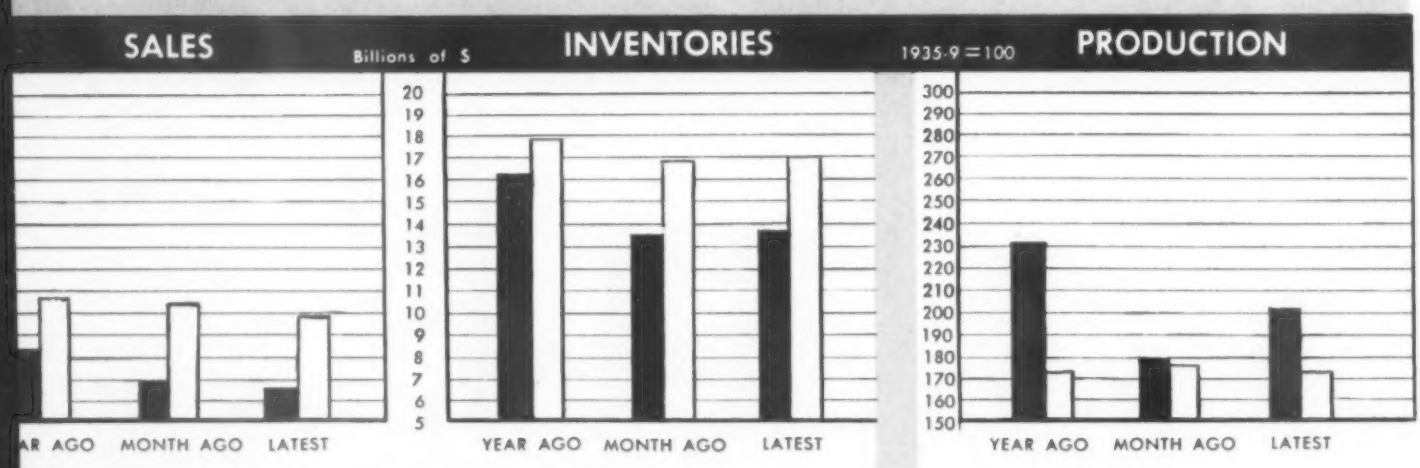
| | 1948 | 1949 | | | | | |
|---|---|---|---|---|---|---|---|
| | Dec. | July | August | Sept. | Oct. (r) | Nov. (r) | Dec. |
| All Manufacturing | 19,065 | 17,114 | 18,945 | 18,866 | 16,824 | 17,341 | 16,606 |
| Durable goods | 8,341 | 7,207 | 7,982 | 7,878 | 6,561 | 7,041 | 6,675 |
| Iron and Steel | 2,251 | 1,703 | 1,850 | 1,895 | 1,108 | 1,457 | 1,657 |
| Nonferrous metals | 640 | 418 | 546 | 579 | 500 | 512 | 539 |
| Electrical machinery | 812 | 669 | 749 | 802 | 756 | 767 | 687 |
| General machinery (exc. elec.) | 1,340 | 1,063 | 1,130 | 1,130 | 1,053 | 1,081 | 1,064 |
| Motor vehicles & equipment | 1,235 | 1,558 | 1,739 | 1,579 | 1,371 | 1,258 | 1,064 |
| Transportation equipment (exc. motor vehicles) | 510 | 487 | 492 | 365 | 359 | 410 | 377 |
| Lumber and timber products | 411 | 362 | 410 | 436 | 409 | 454 | 436 |
| Furniture & finished lumber products | 355 | 288 | 336 | 346 | 324 | 345 | 303 |
| Stone, clay & glass products | 382 | 349 | 395 | 388 | 354 | 393 | 341 |
| Miscellaneous durable goods | 405 | 310 | 335 | 358 | 327 | 363 | 311 |
| Nondurable goods | 10,724 | 9,907 | 10,964 | 10,988 | 10,263 | 10,300 | 9,930 |
| Food and kindred products | 3,036 | 2,774 | 2,969 | 2,989 | 2,890 | 2,834 | 2,777 |
| Beverages | 537 | 674 | 740 | 589 | 528 | 522 | 544 |
| Tobacco products | 272 | 271 | 298 | 285 | 256 | 280 | 259 |
| Textile-mill products | 1,116 | 968 | 1,111 | 1,164 | 1,089 | 1,133 | 1,065 |
| Apparel | 894 | 770 | 995 | 964 | 791 | 688 | 644 |
| Leather and products | 272 | 282 | 316 | 294 | 274 | 254 | 242 |
| Paper and allied products | 538 | 497 | 583 | 644 | 623 | 618 | 584 |
| Printing and publishing | 571 | 555 | 573 | 596 | 509 | 512 | 635 |
| Chemicals and allied products | 1,167 | 1,106 | 239 | 1,274 | 1,174 | 1,182 | 1,069 |
| Petroleum and coal products | 1,742 | 1,511 | 1,598 | 1,618 | 1,575 | 1,654 | 1,583 |
| Rubber products | 280 | 271 | 295 | 277 | 262 | n.a. | n.a. |
| Miscellaneous nondurable goods | 298 | 227 | 245 | 294 | 291 | 333 | 272 |

**Book Value of Manufacturers' Inventories**
**Seasonally Adjusted**
**(Millions of Dollars)**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| All Manufacturing | 34,066 | 32,367 | 31,638 | 31,059 | 30,737 | 30,494 | 30,817 |
| Durable goods | 16,182 | 15,225 | 14,741 | 14,266 | 13,870 | 13,646 | 13,818 |
| Iron and steel | 3,523 | 3,459 | 3,337 | 3,185 | 3,055 | 3,048 | 3,120 |
| Nonferrous metals | 1,078 | 1,115 | 1,064 | 1,035 | 1,023 | 1,028 | 1,049 |
| Electrical machinery | 2,018 | 1,806 | 1,737 | 1,648 | 1,603 | 1,568 | 1,594 |
| General machinery (exc. elec.) | 3,618 | 3,386 | 3,329 | 3,239 | 3,152 | 3,082 | 3,067 |
| Motor vehicles & equipment | 2,133 | 1,904 | 1,824 | 1,769 | 1,678 | 1,626 | 1,656 |
| Transportation equip. (except motor vehicles) | 998 | 903 | 860 | 869 | 839 | 809 | 806 |
| Lumber and timber products | 666 | 617 | 586 | 558 | 598 | 602 | 635 |
| Furniture & finished lumber products | 780 | 757 | 754 | 744 | 717 | 723 | 718 |
| Stone, clay & glass products | 577 | 548 | 527 | 506 | 492 | 474 | 488 |
| Miscellaneous durable goods | 792 | 731 | 724 | 712 | 712 | 687 | 686 |
| Nondurable goods | 17,884 | 17,142 | 16,898 | 16,794 | 16,867 | 16,848 | 16,999 |
| Food and kindred products | 3,015 | 2,842 | 2,884 | 2,806 | 2,955 | 2,983 | 3,071 |
| Beverages | 1,052 | 1,102 | 1,062 | 1,124 | 1,099 | 1,082 | 1,093 |
| Tobacco products | 1,619 | 1,611 | 1,668 | 1,728 | 1,715 | 1,697 | 1,693 |
| Textile-mill products | 2,466 | 2,316 | 2,219 | 2,198 | 2,218 | 2,254 | 2,302 |
| Apparel | 1,564 | 1,421 | 1,359 | 1,332 | 1,332 | 1,357 | 1,380 |
| Leather and products | 609 | 590 | 598 | 614 | 611 | 616 | 610 |
| Paper and allied products | 889 | 832 | 793 | 756 | 739 | 737 | 758 |
| Printing and publishing | 640 | 580 | 568 | 561 | 559 | 589 | 590 |
| Chemicals & allied products | 2,435 | 2,264 | 2,247 | 2,228 | 2,222 | 2,223 | 2,212 |
| Petroleum and coal products | 2,432 | 2,546 | 2,513 | 2,497 | 2,507 | 2,472 | 2,435 |
| Rubber products | 650 | 625 | 586 | 562 | 537 | n.a. | n.a. |
| Miscellaneous nondurable goods | 513 | 415 | 401 | 390 | 373 | 302 | 359 |

n.a. — not available (r) — revised (p) — Preliminary

## SALES, INVENTORIES AND INDUSTRIAL PRODUCTION



# Straws in the Trade Wind

● The Dominican Republic has made public a statement that there are extensive magnetite deposits in that country, capable of producing 1,000,000 tons of high-grade iron ore annually for "many generations". The report stated that the ore contains an average of 68% of metallic iron and is "superior to the Swedish ore currently being imported by the United States".

● U. B. Mull, official of the Department of the Interior, recently told the American Institute of Mining and Metallurgical Engineers that 500 billion gallons of oil and valuable by-products will eventually be available from shale deposits in Utah, Colorado and Wyoming. He said that experiments have shown that commercial motor fuels, diesel fuels and both light and heavy burner oils can be obtained from a raw material that is essentially a low-grade crude.



● Describing the effects of wartime excise taxes as "severe", "discriminatory" and "repressive", representatives of the various industries affected asked for complete repeal of the levies in appearances before the House Ways and Means Committee. They said that the proposed cut of one-half was no assurance of stopping unemployment and declining sales in such industries as furs and luggage.

● Industry is now paying out $5,500,000,000 a year in contributions to pension and welfare plans, payroll taxes and other indirect forms of compensation, according to Martin R. Gainsbrugh, chief economist of the National Industrial Conference Board. Mr. Gainsbrugh estimated this figure as more than 4% of the total industrial wage bill. Payments for indirect compensation in 1929 were $600,000,000 he said.

● The United States foreign trade gap — the difference between what we import and what we export — narrowed slightly during 1949. Exports during the year totaled $12,000,200,000, a drop of 5% from the 1948 figure and 16% below the record set in 1947. Imports were $6,626,200,000, 7% below 1948, a record year, but 16% above the 1947 total. The trade gap shrank from $5,529,200,000 in 1948 to $5,376,000,000 in 1949.

● Tax cuts and a gradual slowdown in the economy resulted in a drop of $1,800,000,000 in internal revenue collections in 1949. Collections totaled $40,501,870,605 last year, as compared with $42,302,864,105 reported in the calendar year 1948. Income from corporation taxes went up from $10,928,910,030 to $11,851,444,106. Manufacturers' excise taxes rose by over $50,000,000.

● After 35 years of Federal Trade Commission operations "independent, small business finds itself in greater peril than ever before" a special House Committee investigating the commission has charged. There is a widespread opinion in the country, according to the committee, that the commission, its staff, or both "believe that certain of the antitrust laws under FTC jurisdiction cannot be enforced". The committe said it must know, "and the people of the United States must know whether or not the Congress is justified in supporting the FTC in its present circumstances and whether or not a reorganization of the commission from top to bottom should be recommended to the Congress for approval".

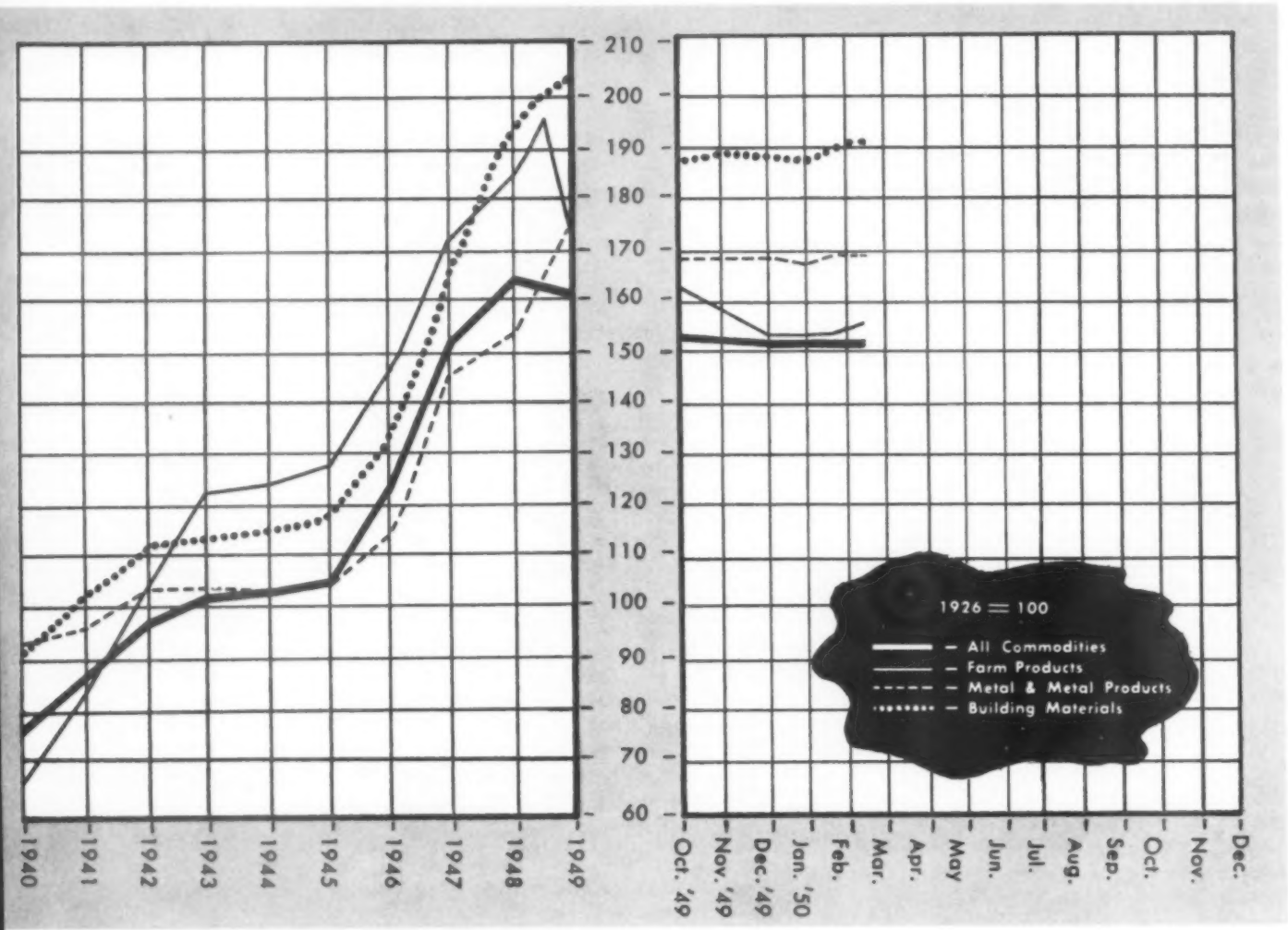
● Harold Stassen, president of the University of Pennsylvania, and possible Republican presidential nominee in the next election has declared that the Taft-Hartley Law is no longer a serious issue in the 1950 elections now that President Truman has invoked it to deal with the coal crisis. He declared that it had been demonstrated that a law "substantially like the Taft-Hartley Act" was necessary to prevent break-up of the country by "small groups".

● The nation's economy is in a strong condition for long-term economic progress, now that the changeover from postwar inflation to a buyers' market has been safely made, according to Secretary of the Treasury John W. Snyder in his annual report to Congress. He asserted that the Treasury's fiscal policies had played "a vital part" in helping to avoid the postwar "boom-and-bust" predicted by many.

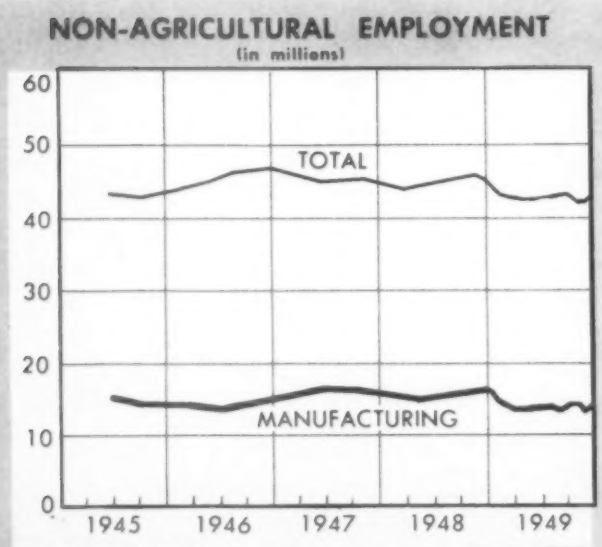


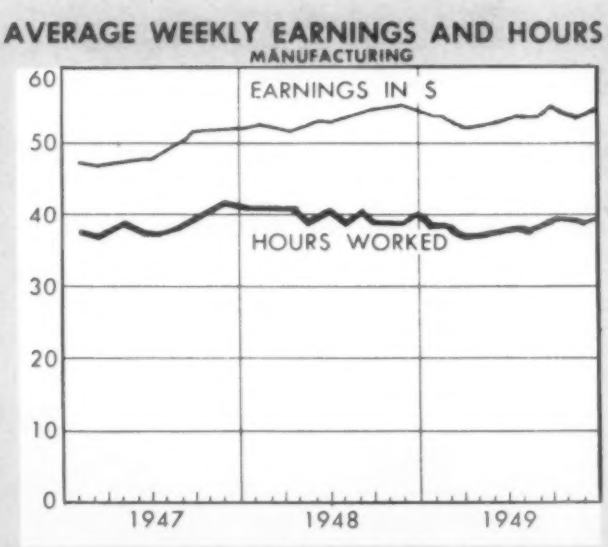
● The Treasury Department has submitted to the House Ways and Means Committee proposals to require labor unions, business leagues and social clubs, as well as charitable and educational organizations to pay taxes on income from the operation of unrelated businesses.

# The Price Picture




# Employment & Earnings




SOURCE: U.S. DEPT. OF LABOR

# The Pulse of Business

The initial flush of optimism that characterized economic forecasts for 1950 during the past few months has subsided somewhat into a complexion of healthy realism. Rarely, however, is the outlook considered pessimistic, except by those inevitable few for whom this attitude is stock-in-trade.

Putting theory aside in favor of actuality, observers seem to feel that the "leveling off" process is nearing completion in practically all phases of industry. There are variations, including seasonal, among some of the chief indicators of the state of the nation's economy, but the general picture appears to be one of a return to a rough balance of supply and demand, and consolidation of the buyer's market in most lines. The pace of the postwar boom is being slowed, it would seem, not by running it up against a brick wall, but by gradually applying the brakes.

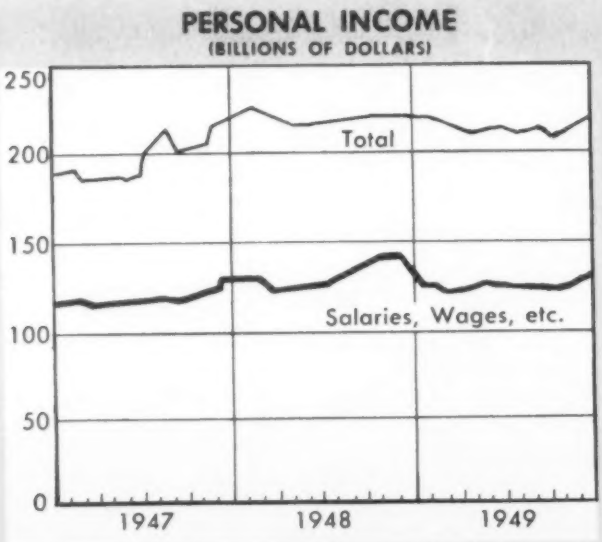
Ignoring, momentarily, the possibility of a complete disruption of industrial operations by continuation of the coal strike, consider conditions in some of the key fields of activity being closely watched by business men. The operating rate of the steel industry, after shooting up following settlement of the strike, has begun a decline — a gradual one, to be sure, but still a decline. The post-strike spurt was based, in part, on rebuilding depleted inventories, many of which should be back in good shape within the next few months. As mentioned last month, it is expected that exports will fall off by about $1,000,000,000 this year; farm income will decline about 10%; new plant and equipment expenditures will drop by about 10-15%; and housing construction will run about 10% behind last year.

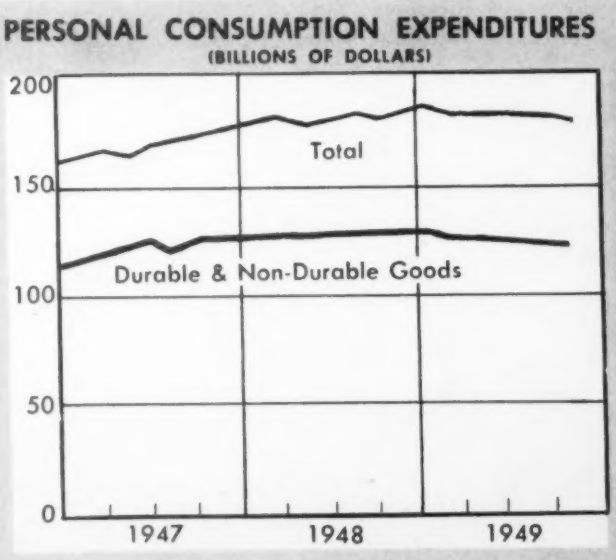
Special attention is merited by the automobile industry, traditionally a good barometer of business conditions. Both production and sales are and have been very heavy in this quarter. Dealers at the recent national convention estimated that auto and truck sales during the first 30 days of 1950 topped the record figures set in the same period in 1949. Both General Motors and Ford were counting on the biggest first quarter output in their histories. (At this writing, Chrysler was still completely shut down by a strike.) Last month top executives of the industry were reported as anticipating a good year generally. A General Motors economist, Dr. Rufus S. Tucker, was a little more specific, however, before a meeting of the Trade Association Executives recently. He said that the industry was catching up with demand deferred by the war and would be back to "normal" by midyear. Sales after that period will be principally on a replacement basis, Dr. Tucker predicted. The fact that the auto industry might not be sustaining the national economy for more than six months does not necessarily indicate a business slump he added, but a return to a normal pattern of relationship.

In two other fields it was the rise rather than the decline that was giving pause to many analysts, even though there were comforting qualifications to be considered. Consumer credit began to climb rapidly in 1949 and is going at a pace that might bring it within a few months to the record high set in 1929. So far, however, credit as a percentage of personal income (which has remained at a comparatively high level) has not assumed dangerous proportions. Both consumer credit and its relation to the personal income figure will be watched very carefully in the months to come. The other rise came in unemployment, which, according to Census Bureau figures, rose to almost four and a half million in January, an increase of nearly a million over December. Much of the rise, according to the Bureau, was due to bad weather conditions in January. Even so, a total of between four and five million unemployed during a period of relative prosperity is viewed by many as something less than healthy.

All the foregoing was written at a time when there was uncertainty as to whether the striking soft coal miners would return to work following John L. Lewis' second instruction that they do so. Any extension of the crippling effects of the strike that had begun to appear at that time would, of course, throw the whole picture out of focus, slowing down steel and auto production and numerous other industries directly or indirectly dependent on coal. Prospects for the balance of the year would then have to be considered in an entirely different light.

## *Personal Income & Expenditures*



# Materials & Markets

## STEEL



Backlogs of steel orders began to build up rapidly with the dimming of hopes for peace in the coal industry. It was difficult, however, to assess exactly what percentage of orders resulted from buyers' concern about possible cutbacks in production because of the coal crisis and how much was being ordered on the basis of normal requirements. By the time this is being read, the coal situation should be cleared up — or at least it will be clear whether the country will have regular industrial activity or chaos. If it is the former, it will be easier to judge the steel outlook from that point on. If it is the latter, it will be anybody's guess what the future holds.

To this point, there have been few substantial cutbacks in steel production because of farsighted building of coal stocks by the mills. But they cannot continue too much longer on reserves—trade circles report that some of the better situated companies have only two weeks' supply on hand.

## NON-FERROUS METALS

Good domestic demand, plus Government requirements, and a moderate demand from Marshall Plan countries, can be expected for copper during the first half of 1950, Dr. Joseph Zimmerman, Editor-in-Chief of the Daily Metal Reporter, told the Public Utility Buyers' Group of the N.A.P.A. recently. He said the present price of 18½ cents a pound is moderate, considering the high cost of production. Copper buying during the past few months has reflected an attempt to rebuild depleted inventories in addition to actual consumption.

The Bureau of Mines reported that lead changed from tight supply to abundance in 1949, as domestic production jumped and imports increased to 380,000 tons, the largest annual tonnage of imports in peacetime. Shipments of automotive replacement batteries, principal lead consumer, continued their decline, dropping to 1,695,000 units in January, as compared with 1,869,000 in December.

## FUELS

At the time this was written, a Federal Judge had just extended until March 3 a temporary no-strike order, issued to the United Mine Workers. The temporary injunction was issued so the judge could have more time to study the Government's request to convert it into the full 80-day injunction under the Taft-Hartley Law. The miners, however, had not responded to John L. Lewis' second order to return to the pits. With negotiations suspended thus, any further observations here would be merely speculative.

Meanwhile, soft coal stocks were said to be down to about a week to 10 days' supply, or at the lowest point in the nation's history. The American Coal Sales Association Bulletin of February 17 stated: "Indications from official sources are that some governmental action must be taken...in time to guarantee resumption of coal production Monday morning if a very serious industrial collapse is to be averted. That action had not been taken on Monday morning, although rumors persisted that the Government would move for a contempt of court citation if the miners continue their defiance of the court.

Reduction in the daily allowable output of about 40,000 barrels of crude oil in Louisiana for March, and notification by purchasers of Texas crude oil that in March they intend to buy 14,329 barrels a day less than in February, reflect lower demand for fuel oil, particularly in the Northeast, where the weather has been relatively mild. Demand, however, may pick up with the advent of very cold weather that moved into the area in mid-February. There is some doubt, nevertheless, that prices on fuel oil will rise appreciably, in view of the abundant supplies already built up. Albert J. McIntosh, Socony-Vacuum economist, recently said that prices for crude oils will probably continue at present levels, because of the decrease in imports. He added, however, that present high prices might encourage too much exploration later, thereby adding additional millions of barrels to the nation's crude reserves and posing a threat to price stabilization.

## CHEMICALS

The chemical market was relatively quiet at mid-month with some apprehension over the coal strike, both because of its effect on transportation and therefore deliveries, and the probability of reduced output of coaltar chemicals. Trade quarters considered the threat to benzol supply, and consequently phenol supply, as critical. It was reported that demand for cresol for the production of synthetic resins had picked up, possibly reflecting an interest in cresylic resins as a substitute in some cases for phenolic resins.



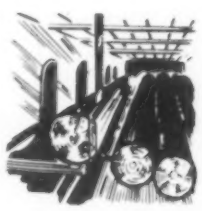
Demand for chlorine has remained unusually high for the season, and producers are reported as shipping behind schedule. Demand for soda ash and caustic soda is fair, and there appears to be adequate supplies of both for prompt shipment.

Potash supply is expected to

improve now that the long (2½ months) strike in mines producing 85% of the nation's supply is over. Supplies available for the current crop year will be about 7 or 8% below those for 1948-49, according to Agriculture Department offcials.

## BUILDING MATERIALS

Heavy demand and growing backlogs still characterize the lumber market. Production, badly crippled in the west because of heavy snows and storms, is gradually resuming, but not at the pace to keep up with orders. Logging is still a big problem because of severe ground conditions. Retailers in the east have reported that from the time the logs are cut and milled, and the finished product is loaded and shipped a month's time can elapse. Western pine, Douglas fir, and white fir are reported in tight supply, and under price pressure. Slight increases in prices of fir and dimension lumber have been reported during the past month. Reports have also been received of an advance of from $1 to $2 per thousand board feet on Southern pine, presumably because of the initiation of 75c per hour minimum wage payments in Southern mills.



Plywood and millwork are in very tight supply and persistent reports are heard that the larger producers are planning to put them on allocation. To date, however, this action has not been taken. Plywood prices are expected to go up again, perhaps by the first of March.

A tight supply situation is developing in plaster board, owing to the tremendous demand created by the lower-priced housing boom. Orders previously filled almost overnight, or within a couple of days, are now taking from one to two weeks, with no improvement in sight. Cement is still in heavy demand, and will continue so as the heavy volume of construction continues. Delivery so far has not been adversely affected by the cut in railroad freight trains necessitated by the coal strike.

## RUBBER

Rubber prices advanced sharply during the month on heavy buying, particularly by the Russians, and on prospects of a probable decrease in supplies during the next few months. Communist advances in the Far East, both political and military, have stirred fears that Indo-China and possibly Malaya will be taken over. Such a move does not appear imminent, however, and some trade sources are inclined to believe that definite indications of an invasion would result in heavy shipments from those countries, and a subsequent temporary decline in price.

Natural rubber production in 1949 dropped to 1,482,000 tons as compared with 1,520,000 tons in 1948. Consumption set a new record of 1,427,500 tons. Production of natural rubber in Malaya dropped 28,000 tons to about 670,000 tons in 1949, but the deputy chairman of the British Rubber Development Board has estimated that production in 1950 should reach a peak of 700,000 tons.

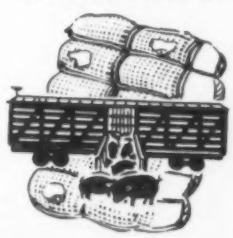
## PAPER AND PAPER PRODUCTS

In keeping with general business conditions, paper demand is still running high for all grades. Trade sources report that steady buying reflects both current needs and inventory building. Activity is expected to stay at a high level for the next 60 to 90 days, but some caution is noted on predictions beyond that. The outlook for prices, during that period at least, is firm.

Paper and board production of 5,711,000 tons in the last quarter of 1949 broke all quarterly records, according to figures releases by the American Paper and Pulp Association. Estimated annual per capita paper consumption in 1949 was 331 pounds. If the per capita paper consumption continues, the Association said, at the rate indicated by the past trend, it is quite possible that annual per capita consumption will have risen to 432 pounds by 1965. That would mean, considering census forecasts, an annual paper consumption of 35,000,000 tons in that year.

## MISCELLANEOUS

Farm prices registered their third straight weekly rise during the month, for the first time in several months. Hog prices, in particular, showed strength, advancing almost 15% from their low price of $15.50 per 100 lbs. in December . . . Growing economic and political differences between Pakistan and India have cut down shipment of jute from the former to mills in the latter, it is reported, thereby endangering the burlap supply in this country. Prospects of an early settlement between the countries are not too cheerful, and it has been predicted that alternative materials, already finding wide use, will make greater inroads on the use of burlap this year. Prices meanwhile are firm, with possible increases looming.



# ZINC SUPPLY GOOD; DEMAND SLOWED BY COAL CRISIS

Demand for zinc, which had been gaining momentum in January because of the spurt of industrial activity following the fall steel strike, dropped off in the past two weeks as the threat of a prolonged crisis in coal and consequent slowing down in steel operations developed into a reality.

The situation indicates, of course, how any substantial change in steel production has an immediate effect on the zinc market. Galvanizing operations by steel mills account for roughly 40% of domestic consumption of zinc. Zinc sales naturally slowed down as the probable effects of the coal strike became more apparent. As this was written, the coal crisis had not been solved, leaving the demand and price outlook on zinc uncertain.

The disruption in the zinc market came at a time when shipments to domestic consumers were climbing, and prospects of steady demand, at least for a few months, were good. Shipments in January totaled 69,020 tons, an increase of 11,219 tons over December, and higher than any month in 1949. Monthly shipments during 1949 had been quite spotty, dropping to 35,564 tons in May, rebounding to 68,659 in August as business activity began to pick up, and going down again in October, as a result of the steel strike, to 43,998 tons.

According to the American Zinc Institute, smelter shipments for domestic consumption were off about 16% in 1949, compared with the previous year. Exports were over 18% lower, but shipments for stockpiling showed an increase of 59%. The over-all tonnage that moved from smelters during the year was lower by about 11%. The consumption figures shown below, which are based on Bureau of Mines statistics, are higher than the domestic shipments reported to the Institute. The difference is accounted for by imports consumed plus withdrawals from consumers' stocks.

Meanwhile, despite shutdowns for a variety of causes, principally strikes, slab zinc production was high. It averaged 2383 tons daily, or a total of 869,882 tons in 1949, compared with a daily average of 2323 tons and a total of 850,105 tons in 1948. This production had been topped only in three other years, 1942, 1943, and 1944.

Imports of slab zinc, and zinc ore which is converted into metal by domestic smelters, continue to represent an important role in the market. Slab zinc imports for civilian consumption in 1949, based on 11 months' figures, are expected by A.Z.I. to run 15% to 20% higher than in 1948. Imports of zinc ore will be off about 7%, also based on 11 months' figures. Canada is the principal foreign source of slab zinc and second in zinc ore. Mexico is responsible for most of our outside zinc ore, and is second in slab zinc shipments. Imports are expected to be a significant factor for some time to come, in view of increasing recovery abroad and the continuing desire of foreign nations to earn American dollars. Conversely, it is probable that our exports of zinc, which boomed following the war, will decline as foreign smelters continue to recover.

Zinc prices have reacted in customary fashion to the rise and fall in demand. Prime Western grade, E. St. Louis basis, reached a high of 17½ cents a pound in January, 1949, dropped to 9 cents a pound in June, 1949 at the low point in the "recession", started climbing during the recovery months of August and September, and dropped again at the time of the steel strike in October. A dual price situation existed at the beginning of 1950, when offerings were being made at both 10 cents a pound and 9¾ cents a pound. Because of the increased demand at the time, it was expected that prices would submit to upward pressure. The 9¾ cents price prevailed, however, and was the quotation current at this writing.

It is safe to expect that zinc buying will jump again following settlement of the coal strike and the resumption of full activity in the steel mills. That in itself would be grounds for an upward price movement. But in view of the more than adequate supply of the metal, the expected gradual decline in steel production, and the moderate second-half outlook for those industries using brass products and die castings, the price outlook appears fairly stable, with movements confined to a rather narrow range.

## SLAB ZINC CONSUMPTION

(Tons of 2000 lbs.)

| | 1945 | 1946 | 1947 | 1948 | 1949* |
|---|---|---|---|---|---|
| Galvanizing | 337,181 | 319,759 | 361,327 | 370,969 | 334,000 |
| Brass Products | 259,377 | 149,102 | 112,347 | 109,140 | 80,000 |
| Zinc-Base Alloys | 130,836 | 212,211 | 214,469 | 234,628 | 197,000 |
| Rolled Zinc | 97,589 | 92,397 | 70,680 | 76,672 | 54,000 |
| Zinc Oxide (French Process) | 18,113 | 19,170 | 18,376 | 15,657 | |
| Other | 9,215 | 8,603 | 9,161 | 10,669 | 17,000 |
| Total U. S. | 852,311 | 801,242 | 786,360 | 817,735 | 682,000 |

Figures compiled by U. S. Bureau of Mines

*Preliminary — Nov. - Dec. estimated by American Zinc Institute

# Purchasing Conference at St. Louis

**District 3 buyers conduct intensive parley on current purchasing problems**

**Confidence expressed for continuing active business through 1950**

**Executives' Night banquet meeting climaxes two-day sessions**

FOR a busy and constructive period of five days, January 20-24, St. Louis was the purchasing capital of the United States. The National Executive Committee and the NAPA Committee on Education were in session over the week-end, separately and jointly, with representatives of all nine districts in attendance. New local associations at Wilmington, Delaware, and Edmonton, Alberta, were voted into NAPA, increasing total membership by about 100, and adding two important industrial centers to NAPA coverage.

On Sunday evening, the annual conference of District 3 got under way with an informal get-together party in the colorful Steamboat Room of the Mark Twain Hotel. The conference attracted some 450 registered members representing every local association in the district, besides the national officers and "observers" from District 8, where the conference idea is currently under consideration. Business sessions were held at the Jefferson Hotel. The mezzanine galleries and corridors were devoted to a comprehensive products display, with fifty attractive and informative exhibits covering a wide range of industrial products and materials. Plaques for exceptionally interesting displays were awarded to Monsanto Chemical Company and the Western Brass Mills.

The conference program itself was practical, diversified, and well balanced. The sessions were uniformly well attended, with evidence of keen interest on the part of all. Culmination of the meeting was the annual Executives' Night Banquet of the St. Louis Association, on Tuesday evening, with more than 800 members and guests—a distinguished cross-section of St. Louis industrial leaders—completely filling the grand ballroom and galleries.

***Monday Morning Session***

*Call to Order*, by A. W. Soell (Gaylord Container Corp.), General Conference Chairman.

*Greetings*, by D. M. Baker (Day-Brite Lighting, Inc.), President, Purchasing Agents Association of St. Louis.

*Welcome to St. Louis*, by Bernard F. Dickmann, Postmaster and former Mayor of St. Louis.



**General Conference Chairman A. W. Soell presided at the opening session.**

*Address*, "Purchasing, Its Importance in Industry", by T. A. Corcoran (Louisville Courier-Journal), President, National Association of Purchasing Agents.

***Luncheon Meeting***

*Address*, "Profits from Purchasing", by George A. Renard, Executive Secretary, National Association of Purchasing Agents.

***Monday Afternoon Session***

*Presiding*, D. M. Crimmins (McQuay-Norris Mfg. Co.).

*Address*, "Purchasing under the

**More than 800 persons attended the banquet meeting on Tuesday evening.**



**National President T. A. Corcoran predicted good business in 1950.**





National Secretary George Renard spoke on "Profits from Purchasing".

Laborite Regime in Britain", by Stuart F. Heinritz, Editor of PURCHASING Magazine. Introduced by Preston M. Green (Combustion Engineering—Superheater, Inc.), Vice President, St. Louis Association.

*Address*, "Report from Washington", by Harold K. Howe, Washington representative and News Editor, LaSalle Steel Co. Introduced by L. C. Gragg (Hussmann Refrigerator Co.), Chairman, St. Louis Products Display.

*Address*, "Lower Costs by Standardization", by Thomas D. Jolly, Vice President (Engineering and Purchases) of the Aluminum Company of America, President of the American Standards Association, and Past President, National Association of Purchasing Agents. Introduced by Fred J. Connell (Maloney Electric Co.), Vice President, St. Louis Association.

### *Tuesday Morning Session*

*Presiding*, Lee J. Bussmann (Bussmann Mfg. Co.).

*Address*, "Outlook for Business and Prices", by Charles L. Sheldon (Hood Rubber Co., Watertown, Mass.), Past President, N.A.P.A.

*Commodity Forum* and discussion of metal markets:

*Steel*, by Fred G. Syburg (Chain Belt Co., Milwaukee), Chairman, N.A.P.A. Steel Committee.

*Freight Absorption*, by H. F. Kirkpatrick (Marsh Steel Co., North Kansas City), National Director, Kansas City Association.

*Copper*, by Henry Bauer (Revere Copper & Brass, Inc., Chicago).

*Brass and Bronze*, by Wallace B. Burnet (Imperial Brass Mfg. Co.), National Director, Chicago Association.

*Zinc, Lead, Tin*, by J. J. Sharkey (Western Cartridge Co. Div. of Olin Industries, East Alton, Ill.).

### *Tuesday Afternoon Session*

*Presiding*, Paul O'Brien (Frank Adam Electric Co.), Conference Program Chairman.

*Forum Demonstration* on "Legal Aspects of Purchasing", by representatives of the Educational Committee, St. Louis Association. R. H. Sperreng, Herbert De Staebler, William M. Bridwell, Herbert H. Lurtz, John L. Pratt, Edward P. Dohrmann, and Arthur H. L. Hunnius.

*Address*, "Our Three R's", by George W. Aljian (California & Hawaiian Sugar Refining Corp., San Francisco), Chairman, N.A.P.A. Committee on Education.



Dwight Palmer's address on "Industry's Opportunity" was a conference highlight.

### *Executives' Night Banquet*

*Presiding*, D. M. Baker.

*Address*, "Industry's Opportunity", by Dwight R. G. Palmer, President, General Cable Corp., New York.

*Comments*, "What's Ahead for Business in 1950", by T. A. Corcoran, N.A.P.A.; W. H. Bryan, President, Witte Hardware Co.; H. T. Jolley, President, Boatmen's National Bank; W. W. Martin, Chairman of the Board, 6th District, Farm Credit Administration.

*Announcement*, "National Convention in Cleveland, June, 1950", by Thomas D. Hudson (American Steel & Wire Co., Cleveland), Vice President of District 6, N.A.P.A., and General Convention Chairman.

### *Conference Committee*

*General Chairman*, A. W. Soell, Gaylord Container Corp.

*Advisory*, Lee J. Bussmann, Bussmann Mfg. Co.

*Secretary*, Preston M. Green, Combustion Engineering—Superheater, Inc.

*Treasurer*, John W. Reynolds, St. Louis Public Service Co.

*Program*, Paul O'Brien, Frank Adam Electric Co.

*Publicity*, D. M. Crimmins, McQuay-Norris Mfg. Co.

*Hotel Reservations and Registration*, George S. Forbes, Century Electric Co.

*Entertainment*, John L. Pratt, Anheuser-Busch, Inc.

*Transportation*, K. W. Guillerman, Majestic Mfg. Co.

*Luncheon*, Charles D. Hoffmann, A. Leschen & Sons Rope Co.

The products exhibit was attractive, informative and well attended.



# HIGHLIGHTS BY CONFERENCE SPEAKERS

### *Business Outlook*

**T. A. Corcoran,** *President of N.A.P.A.* Business has entered 1950 in high gear, and will probably continue at a high level through the first two quarters, with some curtailment in the second half. Total volume will be about the same as in 1949, but with narrower profit margins. Further downward price adjustments are needed to restore balance and sustain volume. This adjustment can be made in an orderly manner.

**C. L. Sheldon,** *Director of Purchases, Hood Rubber Co., Watertown, Mass.* Indicated purchasing policy for 1950 is one of cautious optimism. Watch individual market trends rather than general averages. Corrective price declines are expected after first quarter, followed by extended period of good business. Personal and corporation income about the same as in 1949; profits lower due to high fixed costs and taxes. Full impact of pension plans has not yet been felt.

**W. H. Bryan,** *President, Witte Hardware Co., St. Louis.* Generally good business is ahead for 1950. Some falling off expected in construction and farm equipment fields. New industries, such as television, will continue to expand. Large consumer demand exists, but lower prices and more constructive salesmanship are needed.

**H. T. Jolley,** *President, Boatmen's National Bank, St. Louis.* The financial position of industry and of consumers is sound. Living costs are coming down. Business wants to go ahead, and the conditions are favorable. With reasonable confidence, 1949 volume should be maintained.

**W. W. Martin,** *Chairman of the Board, 6th District, Farm Credit Administration, St. Louis.* Farm income will be lower in 1950, but still good. Credit experience with farm loans has been excellent, but fewer loans have been made recently for new equipment purchases. The only distress areas are due to localized conditions, such as weevil infestation; if these conditions are repeated in 1950, the situations may become serious. Farm business can be had, but manufacturers will have to go after it aggressively.

### *Metals Markets*

**Fred G. Syburg,** *Director of Purchases, Chain Belt Co., Milwaukee.* Steel production and stocks were curtailed in January because of the coal strike. Production in steel using industries reflects these basic shortages. Deliveries on sheet and strip have been deferred. Cold rolled strip and stainless are on a 3 to 4 month basis; plates and structural shapes in better supply; warehouse stocks better balanced except for sheet items. Prices are strong due to shortage. Recent advances have not yet been digested by consumers. Watch for waiving of extras as first sign of softer prices. Galvanized sheet will be in short supply at least to the end of 1950.

**H. F. Kirkpatrick,** *Purchasing Agent, Marsh Steel Co., North Kansas City.* Current confusion in mill pricing practices, due to the cement case decision, has caused serious dislocation in the steel industry, resulting in oversupply in some areas and shortages in others. This is highly undesirable. Steel producers should be in a position to compete over a broader area, and customers must know what their competition is doing. Some plan of sharing distribution costs between producers and users must be developed.

**Henry Bauer,** *Director of Purchases, Revere Copper & Brass, Inc., Chicago.* Every month since August has seen copper deliveries over 100,000 tons, three times the volume of May, 1949, and sales have exceeded deliveries. With conversion time of 90 days from mine to metal the industry has a hard job to gear itself to this demand. The copper price, at 18½¢, is stable, reasonable, durable. Segregation and prompt return of scrap would be helpful. Every copper user should urge on Congress the continued suspension of the 2¢ import duty.

**W. B. Burnet,** *Purchasing Agent, Imperial Brass Mfg. Co., Chicago.* Scrap markets are important to users of brass and bronze. Scrap prices fluctuate with supply and demand, and also with the primary copper market. Little is to be gained by accumulating scrap in anticipation of higher prices. Best current purchasing policy is to maintain normal inventories to support manufacturing programs. Present deliveries: sheet, 3 to 4 weeks; rod, 2 to 3 weeks; ingot, practically overnight.

**J. J. Sharkey,** *Director of Purchases, Western Cartridge Co., Div. of Olin Industries, East Alton, Ill.* Lead production in 1949 set a peacetime high record, but refiners' stocks are below prewar. Government stockpiling is supporting the market. No price change expected. Zinc stocks are up, deliveries down. Efforts to raise the price have been unsuccessful. Tin production is about the same as last year, prices down 25%. World output will be held in check to balance and stabilize the market. Buyers have no surplus stocks. Purchase for nearby requirements only.

### *General Economic Situation*

**G. A. Renard,** *Executive Secretary, N.A.P.A.* Supply and demand are in reasonable balance except for steel and coal. High inventories are more likely to be a liability than an asset. Sound purchasing policies keyed to current market situations are an essential safeguard to good management decisions today. Political rather than economic considerations continue to dominate the national scene, to the detriment of all. Last year, a coal emergency was declared at he beginning of summer; now, with stocks only half as great and the peak heating season ahead, the verdict is "no emergency". A halt in the welfare state philosophy is essential to economic health.

**Harold K. Howe,** *Washington Representative, LaSalle Steel Co.* The U. S. dollar is shrinking. Cumulative total of hidden taxes on products of everyday use is appalling. Bulk of the tax burden falls on the little fellows, with incomes of $6,000 or less, and they are not getting their money's worth. The present Congress will accomplish little. Taft-Hartley Act will not be repealed. Six solid weeks of filibuster have been prepared to block major issues of the Truman program.

### *Standards*

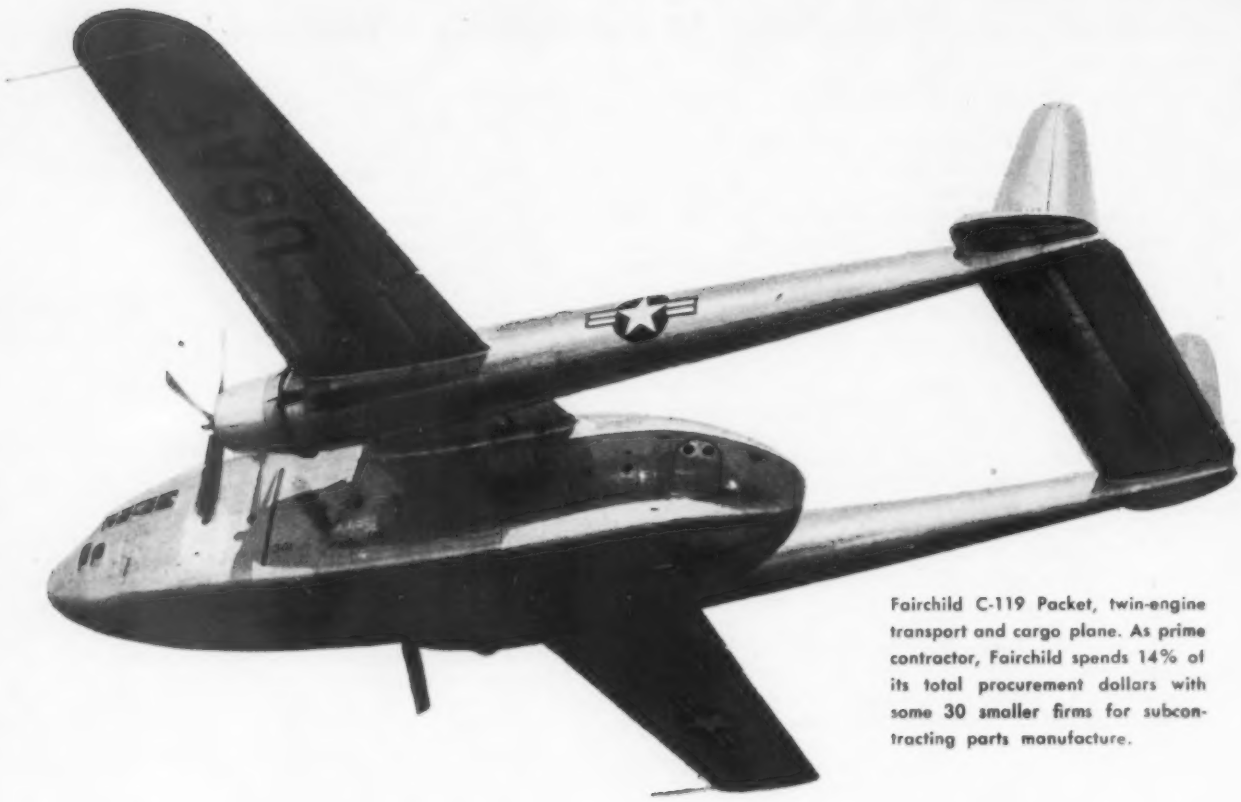
**T. D. Jolly,** *President, American Standards Association.* Standardization of industrial materials, coupled with accurate identification and cataloging, offers tremendous possibilities for the reduction of inventories and carrying costs, besides making possible the economies of mass production. A successful standardizing agency must be broadly representative of engineering, producing, and users' viewpoints. The action of N.A.P.A. in becoming a participant in the ASA program can be highly constructive, provided that membership takes an active interest in promoting the practice of standardization in their respective industries and companies.

### *Education*

**George W. Aljian,** *Chairman, N.A.P.A. Committee on Education.* The "three R's" of purchasing are: (1) Review of the basic principles and responsibilities of the purchasing office; (2) Reflect on the possibility of additional service to demonstrate the important contributions of purchasing to successful management; (3) Re-study yourself and your department in the light of the broad educational facilities offered by the Association.

### *Human Relations*

**Dwight R. G. Palmer,** *President, General Cable Corp., New York.* We cannot hope to win the "cold war" without clean hands and a clean conscience in respect to the American ideals of freedom and equality. We must take inventory of our souls to abolish the evils of bias and discrimination. Every plant can serve as a living laboratory of tolerance and better group relations, thus influencing the communities in which its workers live.



Fairchild C-119 Packet, twin-engine transport and cargo plane. As prime contractor, Fairchild spends 14% of its total procurement dollars with some 30 smaller firms for subcontracting parts manufacture.

# Can "Little Business" Qualify as Supplier to Government?

**Most defense purchases involve a long stage of development and negotiation**

**Placing of government business on a welfare basis has very limited possibilities**

**Small firm's best opportunity is in role of subcontractor to large suppliers**

●

**By A. N. Wecksler**
*(Official photos, U. S. Department of Defense)*

GOVERNMENT purchasing agents have been making an earnest effort to spread the business—to bring the smaller manufacturer into the supply picture. This objective coincides with industry policy to deal with small suppliers. The incentive, however, is different, for while industry seeks to bring in alternate sources of supply as a matter of good operating practice, the Government incentive stems from political pressure.

And the political pressure is a blind force, where one supplier—or a group of suppliers—failing at finding sufficient business to keep up a high level of production, maintains that the Government should somehow absorb the surplus.

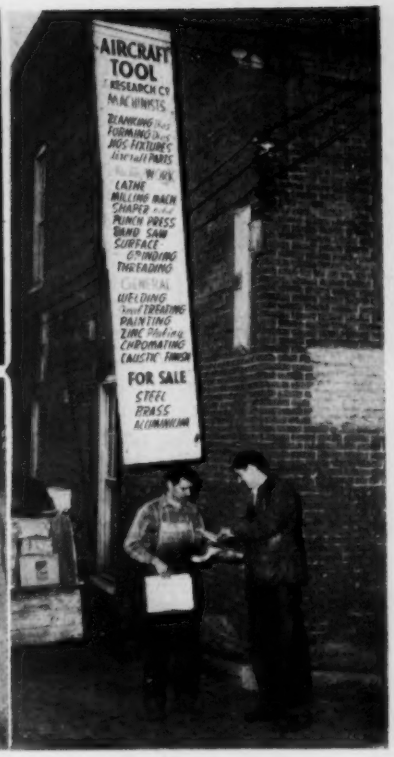
The most immediate target in this search for Government business is the military. The $15,000,000,000 defense budget has a wide appeal, for while a major share goes into airplanes, guided missiles, guns, and tanks, the military establishment consumes in large quantities anything from pins to boot polish.

Traditionally, however, the military tends to minimize the importance of small suppliers as a source of supply, primarily because the military budget throughout history has been one of feast and famine. When there is a war emergency, practically the whole national economy is thrown into the breach, but when the emergency subsides, the military is doled its appropriation with a miser's hand.

From this experience comes the tendency on the part of the military to cultivate sources of supply that will remain interested in the military business through thick and thin.

As a result, the Navy has certain airplane manufacturers, engine producers, and components manufacturers who specialize in Navy requirements. The Air Force similarly has manufacturers who specialize in their requirements.

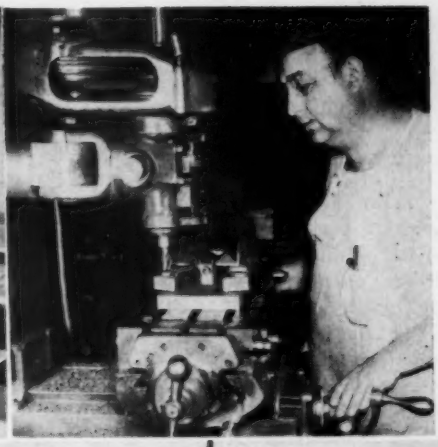







Fairchild spreads the "defense dollar". Purchasing Agent Otto Rauschenberger discusses subcontract with Michael Fuller of Aircraft Tool & Research Co. Fuller is a former Fairchild employee who went into business for himself in 1942, making fittings, special wrenches, blank and drawing dies.







Landing gear trusses and tie down clamps for the C-119 account for about 20% of current business of the Schweitzer Aircraft Corp., Elmira, N. Y. President Ernest Schweitzer and General Manager Paul Schweitzer prepare production reports for the Fairchild Aircraft Division under their subcontract.

In many instances, these manufacurers go through the periods of feast with the military, and tighten their belts when comes the period of famine—but their essential quality is their loyalty to the service that has adopted them. It is true that these manufacturers go out and seek other business, and that there are producers selling aircraft and components to both the Air Force and the Navy—but the tendency toward specialization is certainly there.

The major question is how, in these closely knit relationships, there can be room for the "on again, off again" variety of manufacturers who want to play the field when times are good, but feel that the military—or any other branch of Government—should come to the rescue when the digging gets tough.

Significantly, this feeling that the Government should provide an outlet for surplus capacity is widespread, and is becoming even more so.

This development might conceivably be attributed to some psychological weakness on the part of suppliers—some inclination to lean on someone else's shoulder during periods of difficulty. Actually there

is a more obvious reason—an economic one.

With the Federal Government budget well over $40,000,000,000, combined with State and municipal budgets, the total importance of Government activity to the national economy becomes obvious. The interest payments on Government debt alone run to more than $5,700,000,000 annually.

As Government takes over additional functions, its penetrations into the private economy become deeper, and a larger segment of industry looks upon Government not so much as a customer for its products as a balance wheel for succor when private customers become scarce.

What happens when they bring their case to Washington, and try to get a slice of Government business?

For one thing, they discover that the most profitable relationships with Government are already in the hands of other suppliers. This does not mean that the doors are closed to new suppliers in the myriad of common items consumed by the Government.

It does mean, however, that regularly established Government suppliers have gone through all the spade work necessary to conform to Government specifications, Government procedure, and Government requirements. These established suppliers have made the necessary contacts, and understand the peculiarities of doing business with the Government. Also, through competitive bidding, the price on common items is such that there is little room for a new supplier to come in on a quick urge and get a slice of the business.

When it comes to the military picture, all of the factors that apply to a would-be supplier of common supply items are multiplied by the fact that the military has special supply problems. In the field of aviation supplies, the military—and this applies to both the Air Force and the Navy—goes through a long period of research and development before a product is ready for the manufacturing stage. For practical purposes, the manufacturer has to be in on the birth of a project to even hope to participate when the item is developed to a use point.

A recent survey by this writer of a number of Washington representatives for the major airplane and components manufacturers revealed that, in most instances, the representatives stationed in Washington are largely engineering and technical personnel, whose major function is to nurse their company's product and reputation through the long incubation period between the research and development stage and actual production.

This period of time is a matter of years, and when the product does come to fruition, the companies working through the development stages are, for practical purposes, the logical recipients of contracts for manufacture.

Under such circumstances, the "Johnny come lately" has little prospect of breaking into the chain of Government aviation contracts. At best, he can approach the prime contractor, who has gone through the pains of development, and sell him on some subcontract arrangement to produce parts or components. Here again, however, the component and engine manufacturers maintain their representatives in Washington—technical, engineering and sales—who constantly contact military personnel and work with them on the research and development of their manufacturing specialities.

Where, and what, does this leave the producer who wants to fit Government business into his production schedule when the necessity arises?

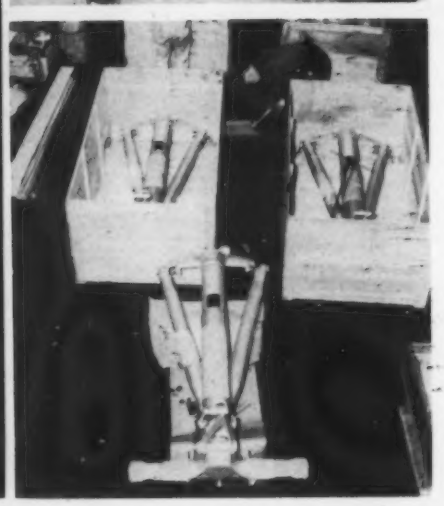
There are in Washington free lance specialists in obtaining Government business who, by knowing the ropes of Government procedure, are in a better position to "sell" than would be the producer back home. Activities of these free lance representatives aroused the fury of Congressional investigators last year during the probe of "five percenters". The problem is that even though the practice of specialist representation at a percentage fee may not be in the public interest, what is available as a substitute?

During the heat of the "five percenters" investigation, Secretary of Commerce Charles Sawyer made a statement that there is no need for anyone to pay 5% to obtain Government business. Secretary Sawyer pointed out that big business firms maintain representatives to get Government contracts, and that they could adequately take care of their own interests.

In the interests of little business, he said that "Commerce Depart-

(*Continued on page 284*)







**Cleveland Pneumatic Tool Company is among the 30 subcontractors participating in parts manufacture for the C-119, making landing gear struts that are subsequently shipped to the prime contractor at Hagerstown, Maryland, for installation in the finished plane assembly.**

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N-A-X HIGH-TENSILE makes it possible to reduce sections by 25% ... and *still provide* greater strength and durability than can be obtained with thicker sections of mild-carbon steel! Each ton of N-A-X HIGH-TENSILE steel represents a potential 33% increase in finished goods. Manufacturers are finding that N-A-X HIGH-TENSILE enables them to get 33% greater usefulness out of steel supplies.

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**UNIT OF NATIONAL STEEL CORPORATION**

# New Law of Guarantees

● *By Leo T. Parker*

**Non-warranty clauses are valid if they are a part of the sales agreement**

**Purchaser must determine suitability of the goods within a reasonable time**

**The court interprets the law to protect the rights of an innnocent purchaser**

IN this article I shall answer in detail two legal questions submitted recently by well known purchasing agents. The first question under consideration is as follows: "Under what circumstances, if any, may a purchaser find himself obligated to accept and pay for defective and absolutely worthless merchandise? And can a seller ever compel a purchaser to pay for merchandise which he did not order or contract to pay for?"

All courts agree that neither a buyer nor seller is obliged to enter into a sale contract, and there is no law which prevents adult persons of sound mind making lawful agreements as they please. Hence, so long as the contract has a lawful purpose, a purchaser is bound by all clauses in the contract, irrespective of how much they are to his disadvantage. For these reasons of law a purchaser who agrees to accept and pay for *worthless* merchandise is obligated to fulfill the *exact* terms of his contract. This is so although at the time the written contract is made he *does not intend* to purchase worthless merchandise.

### *Merchandise is Worthless*

For example, in Pyle v. Eastern Seed Company, 198 S. W. (2d) 562, the testimony showed facts, as follows: A purchaser named Pyle is a farmer who has been growing cotton, feed and vegetables for many years and for about ten years has been growing onion crops. He signed a contract to purchase from a seed company 50 pounds of Babosa onion seed. The sale contract contained a clause as follows: "Notice: All sales subject to loss or damage by fire, shortage or failure of crops, and contingencies beyond control. Eastern Seed Company gives no warranty, express or implied, as to description, purity, productivity, or any other matter of any seed we may send out, and we will not be in any way responsible for the crop." At the time this contract was signed, the seller's representative verbally assured the purchaser that the seed was Babosa onion seed, so the purchaser afterward testified. Also, the written contract clearly stated that the seed being sold was "Babosa".



Pyle planted the seed. Later many experts saw the crop and told Pyle the onions were *not* Babosas. The crop was some worthless variety which the purchaser plowed under. Pyle sued the seller for damages and proved that he had expended a considerable amount of money planting and cultivating the crop, which should have been worth not less than $9,000.00.

In view of the above mentioned clause in the written contract, the higher court held the seller *not* liable in damages to Pyle. The court stated important law, as follows:

"Pyle contends that the failure of the seller to furnish him the variety of onion seed contracted to be delivered is a breach of the contract. This contention is sound enough if the contract did not contain what is generally designated as a non-warranty clause. The buyer and the seller were free to make whatever contract they desired, so long as its provisions were not illegal or immoral. They agreed that the seller gave no warranty, express or implied, as to description, purity or productivity, and would not be in any manner responsible for the crop. In other words, the buyer agreed to this provision of the contract and bought the seed knowing that the seller was protecting itself under the non-warranty provision. It is firmly established that where parties have signed, and thereby entered into a written contract, they are bound by its provisions. The soundness of the above rule cannot be successfully questioned. To allow Pyle a recovery in the face of the non-warranty clause would, in our opinion, render nugatory and meaningless an important clause of the contract."

Also, see Leo Seed Company v. Crary Canning Company, 147 Wis. 166. The testimony in this case proved that a written contract for sale of seed contained a clause to the effect that the seller did "not guarantee the quality of the seed". The seed proved to be worthless, but the higher court refused to hold the seller liable in damages to the purchaser and said:

"There is no claim that the contract signed was not the one agreed upon, or that both parties did not fully understand what they were



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# QUAKER RUBBER PRODUCTS

*custom made for every industrial use*

## KNOW YOUR RIGHTS UNDER LAW OF WARRANTY

**Is purchaser bound by a contract in which seller's warranties are expressly limited or excluded?**

**Is seller relieved of responsibility by non-warranty clauses appearing on a container or in sales literature?**

**What is the purchaser's responsibility for quality inspection of merchandise delivered on a contract?**

**Must merchandise be returned if buyer rescinds a contract for seller's breach of warranty?**

**Under what circumstances can a purchaser claim damages for a seller's breach of contract?**

agreeing to. Plaintiff (seed seller) plainly undertook to relieve itself from liability in case of intermixture, and defendant (purchaser) agreed that it should be relieved. If it be conceded that the contract is one-sided, it must also be conceded that the parties had a right to make a one-sided contract if they saw fit."

For comparison, see Lumbrazo v. Woodruff, 256 N.Y. 92, 175 N. E. 525, 527, 75 A.L.R. 1017. This court said:

"Neither party was obliged to enter into this contract, and there is no public policy which prevents adult persons of sound mind making such agreements as they please, not prohibited by statute, or contrary to natural justice and good morals. This court and other courts have recognized the validity of agreements limiting or excluding implied warranties."

This court also held that where a purchaser signs a contract containing a clause which relieves the seller from all liability on warranties, the seller may compel the purchaser to accept and pay for merchandise that the purchaser discovers is worthless.

### *Not Part of Contract*

Modern higher courts consistently hold that a purchaser is *not* obligated nor bound by statements of non-warranty of which the purchaser has no knowledge, providing the clause is *not* incorporated in the contract. Thus, a purchaser ordinarily is not bound by non-warranty clauses which appear on literature and containers of the merchandise. See Smith v. Oscar H. Will & Company, 51 N.D. 357. Here a non-warranty clause was printed in descriptive literature distributed by the seller. Also, the same non-warranty clause was on containers of the merchandise.

The higher court held the purchaser not obligated by these non-warranty clauses since the seller failed to prove that the purchaser had read them *before* he purchased the merchandise. See, also, to the same effect, Rocky Mountain Company v. Knorr, 92 Colo. 320. In these cases the higher courts held the sellers liable in damages to the purchasers.

### *No Non-Warranty Clause*

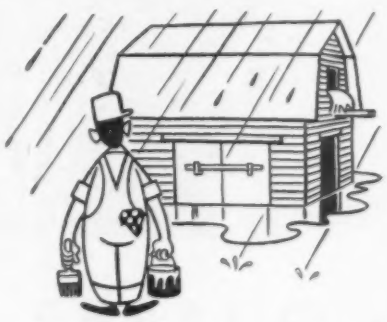
According to a recent higher court, if a contract of sale contains *no* non-warranty clause, the seller is liable on an implied warranty. Also, the fact that the contract contains a clause obligating the purchaser to return the subject of the sale within a specified period, or pay the full purchase price, *does not* forfeit the purchaser's right to return the merchandise found *later* to be imperfect.

For example, in Hydrotex Industries v. Sharp, 208 S. W. (2d) 183, the testimony showed facts, as follows: A purchaser ordered from the Hydrotex Industries certain paint at the total invoice price of $940.60. The contract provided that if the purchaser failed to return the paint within 15 days he guaranteed to keep it and pay for the full contract price.

The paint was delivered to the purchaser in November. In April he remitted $281.40 for the portion used, and attempted to return the unused portion to the seller. The returned shipment was refused by the seller and left with the carrier. Then the seller filed suit against the purchaser for $659.20, the balance due on account for the paint.

The purchaser contended, first, that the seller breached its implied guarantee since the paint was worthless; and second, if he had returned the paint in 15 days, he would not have known whether the paint was good or bad.

The purchaser proved that the paint was applied in February, and that by April the paint had washed off the buildings. Appellees testified that they could not tell whether the paint would be worthless until they tried it on buildings; and that, as soon as they ascertained the worthless nature of the paint, they paid for the portion used and promptly shipped the unused portion to appellant. The evidence shows that he had to apply the paint to a building, and determine the weather effects, before he could learn of the breach of the implied warranty.



The higher court held that the purchaser need not pay for the returned paint, saying:

"The orders, which the appellees (purchaser) signed when he ordered the paint from appellant (Hydrotex Industries), contain no language stipulating against an implied warranty—so the law implies that the paint was to be reasonably fit for use as paint."

For comparison, see Bowser and Company v. Kilgore, 139 S. W. 541. This court said:

"When a manufacturer offers his goods for sale, where the opportunity of inspection is not present before the purchase, the vendee necessarily relies on his (manufacturer's) knowledge of his own manufacture. In such cases the law implies a warranty that the articles shall be merchantable and reasonably fit for the purpose for which it was intended."

Considerable discussion has arisen from time to time over the legal question: If the buyer receives mer-

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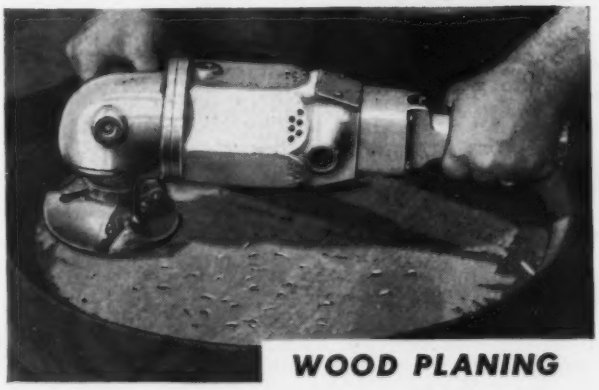
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chandise into his possession and fails to inspect it within a *reasonable time* after he has had opportunity to do so, does he thereby automatically assent to keep and pay for the merchandise? The answer is *yes*.

For illustration, in Kulber v. Fairmont Creamery Company, 80 N. E. (2d) 246, the testimony showed facts, as follows: A seller sued a purchaser for a large quantity of processed shrimp.

The purchaser attempted to rescind the contract and avoid liability on the ground that, on re-sale of some of the frozen processed shrimp, the customers returned the shrimp as being unsatisfactory and unfit for human consumption. Also, the purchaser proved that the seller expressly warranted the shrimp to be "first class shrimp."



Further testimony showed that *at no time* did the purchaser examine the shrimp to know whether same were "first class". Thus the purchaser was negligent in failing to inspect the merchandise. In holding that the purchaser could *not* rescind the contract and must pay the full contract price, the court said:

"The evidence discloses that unless process shrimp was kept at relatively low and constant temperatures, it was highly perishable. A reasonable time within which to examine the shrimp after receiving it would be a *very short* time..... The plaintiffs (purchaser) did not act with reasonable dispatch to determine the condition of the shrimp on the date of delivery."

So, therefore, although a seller expressly guaranteed the quality of merchandise, the purchaser cannot delay an *unreasonable* period of time in making a complaint. If the character of the goods is such that the purchaser can inspect the merchandise immediately after delivery and then determine whether the seller breached his contract, the purchaser is duty bound to do so within a reasonable time after he received delivery of the merchandise.

### *Purchaser Can Keep Merchandise*

Recently a purchaser wrote, as follows: "Is it possible for a purchaser to keep in his possession and use purchased merchandise without paying any part of the purchase price?"

Circumstances may exist under which a purchaser need not *either* return the merchandise or pay for it. If the merchandise is worthless and the sale contract does *not* contain a non-warranty clause, the purchaser may keep the merchandise without paying for it.

For example, in Johnson v. Madison Paint Company, 170 Ark. 1193, the higher court said:

"Where there is a breach of the warranty in order to rescind, there must be a return of the property, or an offer to return it, within a reasonable time; but, where the property is wholly unfit for the intended use, an offer to return the property in order to rescind is not essential."

This same legal situation may arise when a seller makes a contract with a minor.

For example, in the leading case of Leslie, 34 S. (2d) 813, the testimony showed facts, as follows: A girl only 17 years old purchased $999.34 worth of clothing on credit. She wore out the clothing and refused to pay for it.

In subsequent litigation the higher court held that the minor need *not* pay for the clothing. This court explained that a minor never is liable on a contract unless he elects to be liable.

### *Violated State Law*

According to a recent higher court, if a seller violates certain *state* laws, the purchaser may keep and use purchased merchandise without paying any part of the purchase price.

For instance, in Crites Company v. Associated Company, 191 Pac. (2d) 650, it was shown that an Oregon state law clearly provides that a corporation located in other states and "doing business" in the state of Oregon must file certain papers showing the location of its principal office and other data, and also identify its represenative in Oregon to the state officials.

A company located in another state sued a purchaser in Oregon to recover money due for purchased products. Since the company had not complied with the above law, the higher court held that the suit could not be maintained. The court said:

Whether a foreign corporation is doing business in this state does not depend upon the number of transactions that it has, but upon the nature and character of the transactions."

### *Purchaser Pays Part*

Numerous situations may arise under which a purchaser may keep and use all shipped merchandise and pay only a part of the contract price.



For illustration, in Gris v. Tucker, 216 S. W. (2d) 276, the testimony showed these facts to be true: One Tucker went to a truck dealer named Gris to obtain a motor truck. Gris told Tucker he had three trucks, two of which were 1946 models and one was a 1947 model, each priced at $1,750. Tucker decided to take the 1947 model, and made a deal by which Gris accepted Tucker's 1942 model truck in trade at $500, and $1,250 in cash for the 1947 model truck. Hence actually Tucker paid $1,750 for the truck.

Tucker operated the truck for sixty days and was well pleased with the way it functioned, but he noticed that the license receipt had been changed from 1946 to 1947 and he became convinced it was a 1946 model. He went to Gris and asked for an adjustment of the difference in the value of a 1946 and a 1947 model. Gris refused to make any adjustment saying that Tucker had examined the truck, and drove it before making the purchase and should have known it was 1946 model, since he was well acquainted with all Ford truck models.

Nevertheless the higher court held that Gris must pay Tucker $300 damages. The court said:

"It is the settled rule that covenants, promises and assertions made by a seller concerning the quality of

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an article sold, if relied upon by the buyer, amount to warranties..... There was ample testimony to the effect that a Ford dump truck of 1946 model was worth on the used car market from $300 to $350 less than a 1947 model Ford dump truck."




This court explained further that if Gris had proved that *before* making the deal for the truck Tucker *knew* that it was a 1946 model instead of a 1947, then, under these circumstances, Gris would *not* have been liable. This is so because a purchaser cannot recover damages based on a seller's fraud or warranty if the purchaser knew, *before* he made the purchase contract, that the seller was practicing fraud.

On the other hand, a seller always is liable for fraud or guarantee if the purchaser purchased the merchandise when relying on fraudulent statements made by the seller.

See Morriss Company v. Huss, 113 S. W. (2d) 891. This court held that when the testimony shows that the buyer did not know from his own experience whether the representation made by the seller was true or false, but the purchaser relied solely upon the statements of the seller, such representations became warranties, and a breach of such warranties on the part of the seller entitles the purchaser to sue and recover damages equal to the difference between the value of the guaranteed merchandise and the actual value of the goods delivered to the purchaser.

### Counter Damages

Briefly, a purchaser may file a counter suit against a seller and recover full damages caused by the seller's breach of guarantee, or warranty. These damages may include (1) profits the purchaser lost as result of the breach; (2) rentals paid for machinery or merchandise to substitute the merchandise purchased; and (3) all other consequental damages. This law is applicable to repairmen as well as sellers.

For example, in Levin's Exchange v. Samuel, 28 So. (2d) 340, it was shown that a company is engaged in the business of buying and selling merchandise. It sent certain appliances to a repairman with instructions to recondition them. The repairman failed to fulfill his contract to do the reconditioning work, and the company sued for damages.

The testimony showed that $395.50 was the fair value of the merchandise *after* it would have been reconditioned. Also, the testimony proved that the repairman's charge would have been $181.50.

Therefore, the higher court awarded the company *as damages* the difference between $395.50 and $181.50, or $214. This court said that the measure of damage for breach of a contract to repair and recondition merchandise is the *profit* of which the owner was *deprived* because of the breach.

Of course, a repairman cannot be held liable on any alleged guarantee not clearly proven.

In Crosby v. Little River Company, 31 So. (2d) 226, one Crosby, a repairman, sued the Little River Company for $4,210 for repairing motor equipment. The company contended that Crosby was liable in counter damages because the delay in performing the repair work had caused the company to be damaged $20,114 due to being deprived of use of the equipment.

The company failed to prove that Crosby had agreed to complete the work within *any* specified time.

Therefore, the higher court refused to hold Crosby liable in counter damages to the company, and ordered the latter to pay Crosby $4,211 for the repair services rendered.

### No Guarantee

If a complaining purchaser fails to prove that a seller breached a valid expressed or implied guarantee, there can be *no* damage allowance to the purchaser.

For example, in Friedman v. Georgia Showcase Company, 183 S. W. (2d) 9, it was shown that a buyer ordered fixtures by specifications. A few days before the agreed delivery date the buyer was informed by the seller that the fixtures could not be delivered on the date specified in the contract. Hence, the seller was ready to breach his contract. However, instead of demanding the seller to comply with the terms of the guarantee the purchaser *changed* the specifications and later accepted the modified fixtures.

Later the buyer attempted to collect damages from the seller based on delay in making the delivery. In holding the seller not liable, the court said:

"Friedman's (purchaser's) course of conduct indicates that he did not construe the contract as making time of the essence and, we think, he waived the time provision by giving instructions for alterations too late for the fixtures to be completed by the time fixed by the original contract and after the time for performance had elapsed."



Notwithstanding this rule of law the courts prefer to give benefits of doubt to the purchaser. Moreover, where the testimony shows that a purchaser acted in good faith, the courts will award the seller no more than the amount actually due. This rule of law applies to purchasers who in good faith purchased mortgaged or other encumbered merchandise.

For illustration, in Guerin v. Kirst, 202 Pac. (2d) 10, the testimony showed facts, as follows: One White purchased a tractor and made a small down payment. He signed a conditional contract which provided that the seller held legal title to the tractor until the purchaser made the agreed monthly payments. A purchaser named Kirst had *no* knowledge of this conditional contract and purchased the tractor from White paying cash for the initial payment.

In subsequent litigation the higher court held that Kirst, being an innocent purchaser, could retain the tractor by paying the balance due the seller under the terms of the conditional sales contract, signed by White. The court said:

"The law has always endeavored to protect the rights of the innocent purchaser for value, and such protection should readily be extended to those cases where no injustice is done to others."




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## ● To Presidents, Sales Managers and Advertising Managers



# Never Underestimate the Power of THE PURCHASING AGENT

*2nd Report*

Good purchasing can mean the difference between a profit and a loss. Clear thinking management knows that the difference between competent purchasing and mediocre buying can amount to as much as 10% to 15% on the cost of equipment, materials and supplies purchased—this cost approximating one half the total selling value of goods produced. This is a profit equivalent of *doubled sales* volume.

Simple arithmetic has dictated the wisdom of placing full authority for buying decisions in the hands of the purchasing executive. Lack of centralized control is costly and chaotic. Never underestimate the power of the Purchasing Agent, whether you are managing a corporation or selling to industry.

TURN THE PAGE TO MEET A FEW OF THE **MEN WHO BUY**

# Two new G-E fluorescent lamps bring out all colors for the first time...

GENERAL ELECTRIC'S two new fluorescent lamps show colors as never before possible with fluorescent lighting! These two lamps—De Luxe Cool White and De Luxe Warm White achieve excellent color rendition in fabrics, paints, finishes—meet the need for better lighting of color-critical areas throughout industry.

The reason: a revolutionary new phosphor "D-R", developed by General Electric Lamp research and used on the inside coating of the two new lamps. Now available in the 40-watt size, the De Luxe Cool White and De Luxe Warm White lamps will soon be available in other standard sizes.




## New, simplified lamp line makes selection easy!

| | | |
|---|---|---|
| IF YOU WANT COOL ATMOSPHERE | WITH HIGH EFFICIENCY, USE | STANDARD COOL WHITE |
| | WITH BEST COLOR EFFECT, USE | DE LUXE COOL WHITE |
| IF YOU WANT WARM ATMOSPHERE | WITH HIGH EFFICIENCY, USE | STANDARD WARM WHITE |
| | WITH BEST COLOR EFFECT, USE | DE LUXE WARM WHITE |

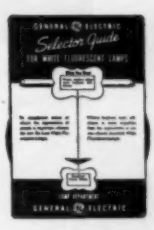
The new DeLuxe lamps, plus General Electric's two Standard lamps, create a 4-lamp line that fills practically every fluorescent lighting need and makes selection easy. The chart at left shows how to choose the right lamp for your needs.

**STANDARD COOL WHITE** (formerly 4500 white)—high efficiency with reasonable color rendition. Preferred for most working and selling areas.

**DE LUXE COOL WHITE**—gives excellent color rendition with good (but not highest) efficiency. For areas where color rendition is most important.

**STANDARD WARM WHITE** (formerly Warm Tint) provides high efficiency combined with color impression of filament lighting.

**DE LUXE WARM WHITE** combines excellent color rendition with good (but not highest) efficiency. For warm environment where excellent color rendition is essential.




**FREE SELECTOR GUIDE** shows you need to meet your lighting requirements. Write General Electric, Div. 166-P-3, Nela Park, Cleveland 12, Ohio.

*You can put your confidence in—*

**GENERAL ELECTRIC**


*Want Additional Product Information? See Page 19.*

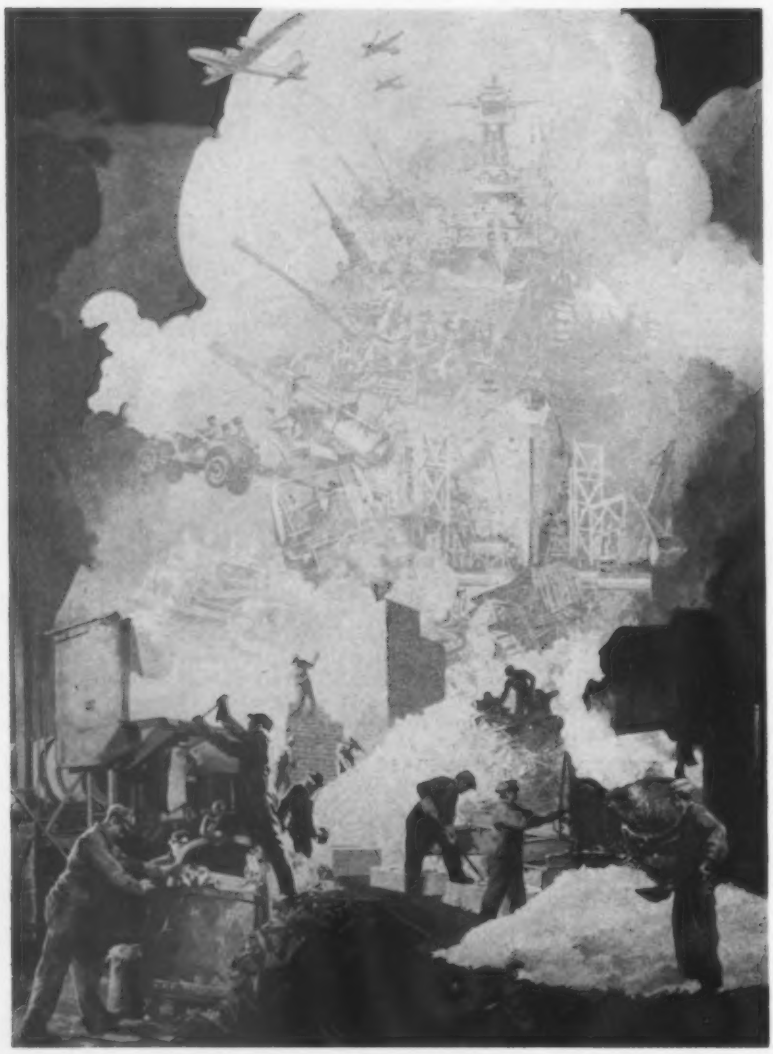
# How We Got Where We Are

• *By Grey Leslie*

**History explains the American character and points our future course**

**As of today, democracy is the oldest and most stable form of government**

**National progress stems from resourcefulness and cooperation**



**This mural, at the Federated Metals Division of American Smelting and Refining Company, depicts the resources, cooperation, and strength of American industry.**

UNDER the title "Paths to the Present" (Macmillan Company, 1949) the distinguished historian, Arthur M. Schlesinger, presents a collection of thirteen essays on phases and problems of American life and government. It is a notable achievement in which purchasing agents will find much of immediate value in their daily work and much more of permanent value in knowledge of the American character.

The title Professor Schlesinger chose for his fascinating book is particularly apt. It suggests the tortuous roads our forebears traveled to bring this nation to its present greatness. The author shows us the many by-paths, the arduous trails and the hazards that confronted the founders of our government. Tracing our nation's journey to the present under the skilled guidance of Professor Schlesinger we begin to learn a great deal about ourselves as Americans.

In pointing out the various signposts on the Paths to the Present, he indicates some paths that may lie ahead for Americans of this generation, on their continuing journey toward the destiny of the United States. He also directs our attention, in a most entertaining and informative way, to some of the fortuitous phenomena peculiar to our great nation—some incidents and some accidents that have contributed to that greatness and have given Americans certain characteristics and habits that are unique.

Reading these essays, one begins to see what it is that makes Americans different—what it is that engenders their assertive independence and how their distinctive characteristics have impressed foreign observers.

Professor Schlesinger is a skilled historian. He recognizes that the highest function of his profession is the responsibility of illuminating the present by providing accurate and useful knowledge of the past, and judging it unemotionally. These are maxims that seem to have been too frequently neglected by many of the academic historians who have prepared our text-books. Knowing where we have been and how we got there, may give us some reliable guidance as to where we want to go, and how to get there.

The discussions offer sane warnings of some of the pit-falls and traps on our broad mental highways. We are sometimes inordinately proud of these free-wheeling, eight-line, fast-paced roads. Often the



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speeding traveler has no time to notice where he has been and does not seem to care much about where he is going.

Those who are interested only in hustle and satisfying the urge to "go places", may find this collection of essays altogether too pedestrian; but for those who refuse to run blindly with the spinning wheels like frenzied animals, the book is a friendly invitation to step aside for a bit, out of the mad traffic, to look back a little with safety, so that they may plan the further journey with intelligence and profit.

### *Stable Democracy*

It is not too generally recognized that this democracy of ours in the New World, is really the patriarch among modern governments in this era of change.

If the United States were a business concern, the Directors would proudly assert its age and stability. They might even inscribe its letterhead: "United States of America—Founded 1789."

Its highly respectable antiquity might be emphasized by portraits of the Founding Fathers in all their impressive dignity, complete with knee-breeches, silver-buckled shoes, and powdered wigs. Or if that would appear too aristocratic for a democracy, they might portray some of the more rugged personages of our early beginnings, with coon-skin caps, moccasins and a handy musket.

Other political regimes have changed their basic form of government pretty radically since 1789. Many new nations have appeared on the world scene, and some very old ones of that time have altogether ceased to exist.

For example, the British date their present official title of United Kingdom only from 1801, and the Mother of Parliaments numbers its official sessions from that year.

The French are living under their Fourth Republic since 1789 and are now actively debating with some ardor, whether or not they wish to change it again. In seventy years, the French people have had more than 110 governments, and they have tried 15 Constitutions since 1791.

Few reigning houses can boast of tenure of office as long as our own forty political, democratically elected administrations. The family of King George III of Britain, the royal gentleman who tangled with our first President, Washington, still reigns, but does not rule, in Britain. The royal line of Louis XVI of France, Washington's and America's friend and ally, is impotent if not almost extinct.

In the year when the United States was electing its 32nd President, the Soviet Union was celebrating the 31st Anniversary of the Bolshevist Revolution. Since that date, November 7th, 1917, the United States has elected a President eight times, and renewed its national legislature sixteen.

The "new" government of Russia does not operate in that fashion. There has been nothing remotely resembling a popular election there in thirty-one years, but there have been several political "purges" and many mass "liquidations".

The nations of Europe have had so many changes of government, constitutions, and geographical delineations, and threaten to have so many more, that it is highly impracticable to attempt to issue an up-to-date geography or historical textbook describing them.

In the light of all this, our America of 160 years might seem at first glance to typify an old nation, and those countries of Europe and Russia the new ones. But, as Professor Schlesinger reminds us, a nation is more than a form of government. We feel instinctively that the United States is really the young nation of the world and it is really the others that are old.

### *Formative Influences*

It was a happy selection to open this series of essays with a reconsideration of Crevecoeur's famous, and still unanswered question, "What then is the American, this new man?" Crevecoeur was, of course, only one of a long procession of Europeans who were intrigued by the "experiment in government". All of them tried to appraise and describe the American.

Is the American really a new man? What is new about him? What accounts for his new characteristics? Professor Schlesinger has explored these questions and submits a few observations. Experience and environment, he tells us, furnished the Old World emigrant with new characteristics, and it was the new environment that promoted them. Industriousness, ingenuity, frugality, self-reliance, adventure and fierce independence were strong qualities developed for well over two centuries by an agricultural and largely rural background. The changes by which industrialism merged that background into urbanism altered the American's characteristics somewhat, but they substituted new habits equally distinctive.

The American, so the author tells us, is the product of Old World influences and New World conditions. A generally democratic body of Europeans, diligent, resourceful, thrifty, and deeply religious, was thrown into an environment that offered great wealth, solid comfort and independence in return for hard work and steady application.

The transition from rural to urban life presented social and economic problems that modified the American's individual resourcefulness and substituted specialization for versatility. But the American retained many of his singular qualities.

### *Working Together*

The essay "Biography of a Nation of Joiners" elaborates one of the most important aspects of the American nature. It describes the gregariousness which is a prominent feature of our society. When we think of "joiners" we are likely to think largely of the many fraternal orders, of countless reform societies or of groups which desire to extend a hobby or perpetuate the memory of past associations. "Joiners" in many senses have comic overtones, but it is important to consider that the same instinct that leads Americans to join together for business, professional, social or fraternal purposes, leads them to join together to establish a humane society, found a college, or create a political party.

Such activities are genuinely democratic. They furnish a ready outlet for enthusiasm and energy and they invite leadership. All have left their indelible imprint on the American character.

The essay on the role of the immigrant is a useful reminder that all Americans are immigrants or the descendants of immigrants. It tells us that non-English stocks constituted a substantial portion of the

(*Please turn to page* 286)

**AMERICA'S WORLD WARS SPAN 260 YEARS**

I. King William's War (1689-1697)
II. Queen Anne's War (1702-1713)
III. King George's War (1744-1748)
IV. French and Indian War (1754-1763)
V. Revolutionary War (1775-1783)
VI. Undeclared French War (1798-1800)
VII. War of 1812 (1812-1815)
VIII. "First" World War (1917-1918)
IX. "Second" World War (1941-1945)

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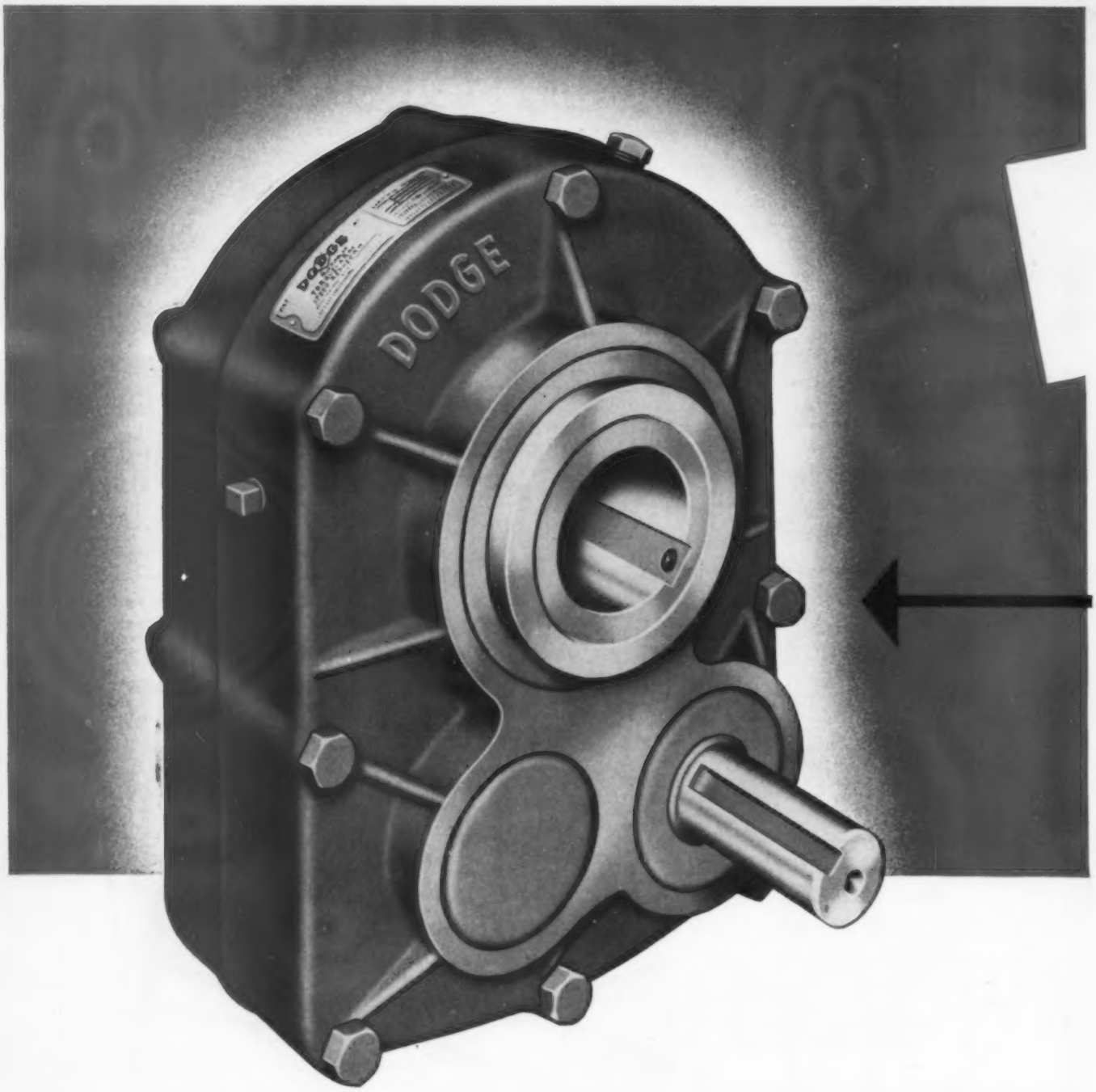
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Manufacturers of STAINLESS STEEL FASTENINGS
CASTLETON ON HUDSON, NEW YORK




- Available from *stock,* with stock-product economy. Built in six sizes with capacities up to 25 H.P. Develops any output speed from 13 to 133 R.P.M. through the use of stock TAPER-LOCK sheaves as prescribed for the job.
- No special engineering required. No foundation to provide. No flexible couplings. No sliding base. No "lining-up" difficulties. No expensive installation.
- Reducer locks on the shaft-to-be-driven with a steel locking collar on *each side* of unit.
- Unit is driven through any V-Belt Drive. This absorbs shock loads. Speeds can be varied by simple change of sheave. Interchangeable bushings adapt shaft sleeve to different shaft sizes, making application to other machines practical and easy.
- Torque arm, fastened to floor or any fixed object, anchors the reducer unit. Turnbuckle in torque arm provides fast and accurate adjustment of belt tension.
- Extremely compact, light. (Size No. 1 weighs only 35 pounds.) Extremely rugged. Cast iron housing. Double reduction train of helical steel gears. Shaved for *quiet* operation—heat treated for *long* life. Generous capacity deep groove ball bearings. Neoprene seals.
- Backstop available when required. Simple and positive. Easily installed on input shaft. Sealed from dust and dirt inside the reducer case.
- The TORQUE-ARM SPEED REDUCER is a *DODGE* product—which means *fine* engineering, *quality* manufacture. Get all the facts. *WRITE* for bulletin with selection tables.

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# TORQUE-ARM SPEED REDUCER

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## SAVES MONEY!



The Dodge TORQUE-ARM SPEED REDUCER is a new tool for the mechanical transmission of power, so practical in design, so effective in operation, so low in cost, that it promises to benefit industry as extensively as the famous Dodge-Timken Bearing, the Dodge Rolling Grip Clutch, the Dodge Taper-Lock Sheave and other Dodge "firsts."

If you use conveyors of any kind, bucket elevators, agitators, mixers, feeders, processors or similar machinery—here is your opportunity to improve your drives, reduce maintenance and make substantial savings on equipment and installation.

See your local Dodge Distributor. Simply give him your horsepower requirement and the desired speed and size of the shaft to be driven. He will furnish you *from stock* this complete speed reducer package, to fit your job accurately, economically.

**WRITE** to us for Bulletin No. A470 with details, specifications and easy-to-use selection tables.

**DODGE MANUFACTURING CORPORATION • 1300 UNION STREET, MISHAWAKA, INDIANA**

*CALL THE TRANSMISSIONEER,* your local Dodge Distributor, for information on new ways to improve machine performance, cut costs. Look for his name under "Power Transmission Equipment" in your classified telephone book.



# DODGE

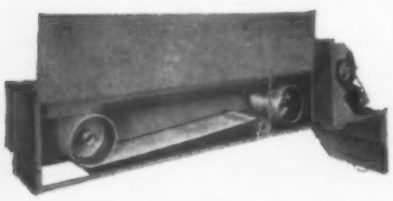
## of Mishawaka, Ind.

***FIRST IN POWER TRANSMISSION MACHINERY***

# New PRODUCTS · IDEAS

*If you want more information on New Products items, just list the item numbers in a letter to Purchasing Reader-Service Department on your company letterhead. This also applies to Catalogs and Bulletins described on Pages 19, 20, 22, 24 and 26. See Page 19.*

## Belt Feeder



An easily installed belt feeder that is described as compact, totally enclosed, yet fully accessible, has been introduced by Richardson Scale Co., Clifton, N. J. Originally designed to deliver a continuous stream of material from an intermittently discharging automatic bulk scale, the unit has a wide range of applications as a feeder or "take-away" conveyor, according to the manufacturer. A variable speed drive can be furnished which is automatically adjustable to vary the stream in conformity with the timed discharges of an automatic scale. The feeder is available in lengths from 18" to 60", and in stream widths of 2", 4" and 6" with a rated capacity up to 1500 cubic feet per hour. Belt speed is from 0 to 200 feet per minute.

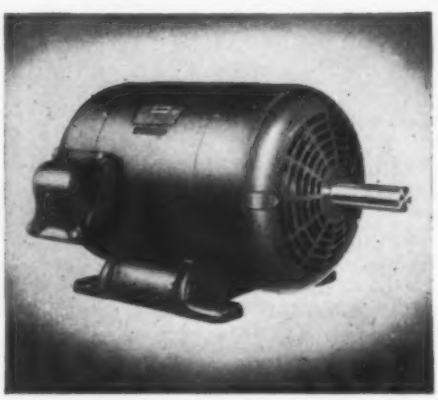
**No. 100—For further information see Page 19**

## Power Transmission Unit

For light duty, slow speed antifriction bearing applications, The Fafnir Bearing Company, New Britain, Conn., has developed a ball bearing power transmission unit called the Flangette. It is described as a simple arrangement of two pressed steel stampings to form an inexpensive flanged housing enclosing a standard Fafnir self-aligning Wide Inner Ring type ball bearing. Its features are said to be light weight, low cost, factory sealed-in lubrication, and ease of installation. According to Fafnir it is expected to find uses in such lines as light duty conveyors, dryers, tumbling barrels, etc. It is available for shafts of 18 sizes ranging from ½" to 2-3/16".

**No. 101—For further information see Page 19**

## Explosion-Proof Motors



Westinghouse Electric Corporation, Pittsburgh 30, Pa., has announced the availability of squirrel cage, totally enclosed, type CSP, explosion-proof Life-Line Motors. The motors are for constant speed drive applications, such as pumps, blowers, or compressors, and may be safely used in any location where Class I Group D explosive materials or atmospheres are encountered. Heavy steel construction is used for resistance to corrosive atmospheres. Prelubricated ball bearings provide effective lubrication without attention. Available in frames 224 to 326, in 1 to 20 hp ratings, for 2 and 3 phase, 25, 50, 60 cycle, 208, 220, 440, 550 volt service.

**No. 102—For further information see Page 19**

## Flexible Head Wrenches



The safety and power of the socket wrench, plus greater clearance advantages when working under obstructions, are described as the features of new Flex-Head wrenches. They are made by Snap-on Tools Corporation, Kenosha, Wis. The double-hexagon, broached heads flex over 180° to give all angles of turning action. With the handle in vertical position the nut can be spun on and the handle then flexed over for the final tightening. With handle in horizontal position little overhead clearance is necessary. The wrenches have different size openings at each end. They are available in the following sizes: ⅜" and 7/16"; ½" and 9/16"; and ⅝" and ¾". Overall lengths range from 5⅝" for the smallest to 8¾" for the largest.

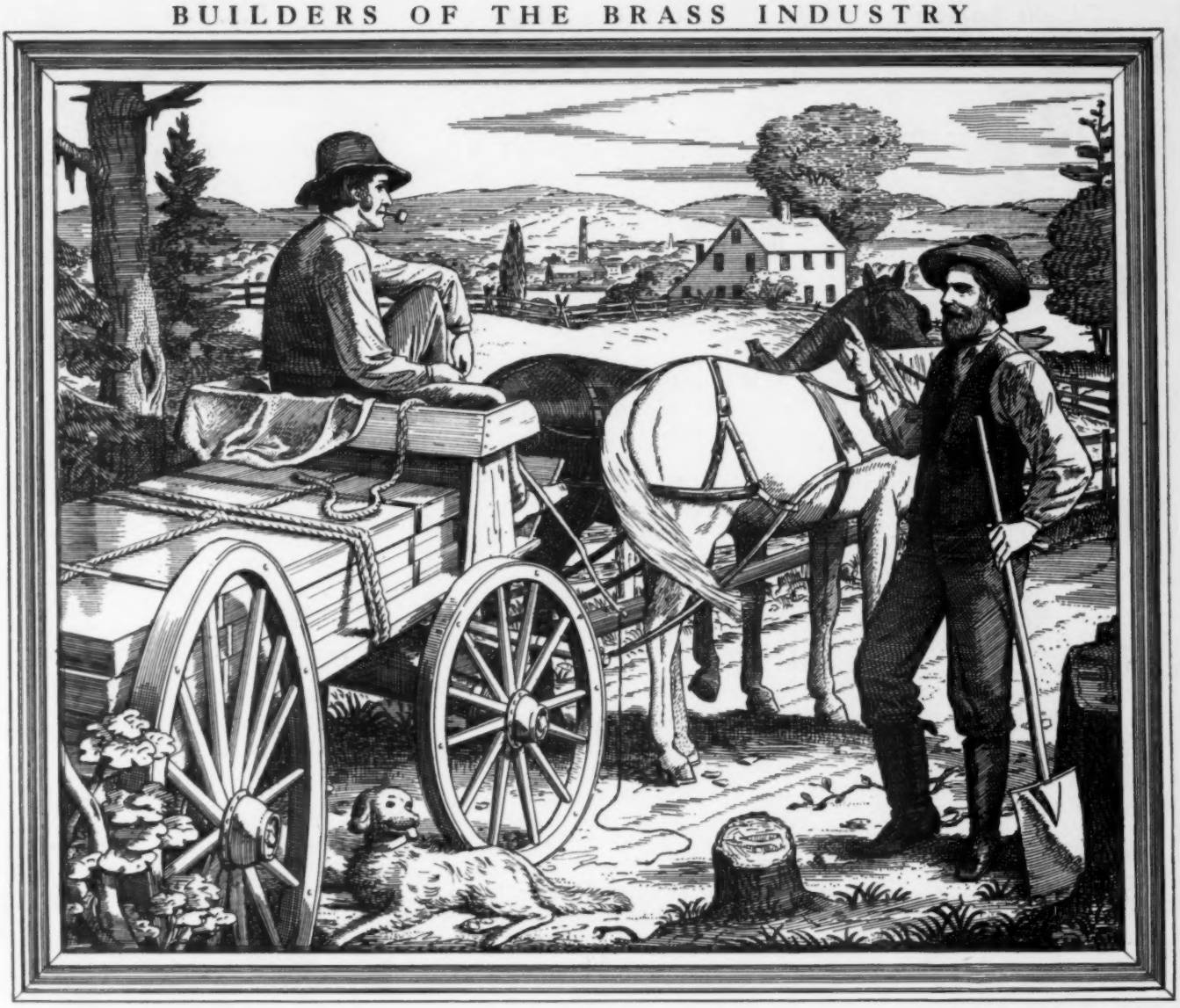
**No. 103—For further information see Page 19**

## Portable Saw Blades

Henry Disston & Sons, Inc., Tacony, Philadelphia 35, Pa., is now marketing a line of circular saw blades for portable electric saws. The saws are made in all popular sizes with center holes tailored to fit the individualized mandrels of Black & Decker, Mall, Skilsaw, Thor, and Porter Cable electric powered units. They are offered in crosscut, rip and combination types. All have a high finish and keen teeth, accurately fitted, Disston states.

**No. 104—For further information see Page 19**

*(Please turn to page 142)*





# ELISHA WELCH

(*Second President of* BRISTOL BRASS)

*Money-nurseryman . . . Lover of figures . . . Northern secessionist . . . Man of decimal-details . . . Yet man of broad vision who did even better than move mountains . . . Hence one of the first U. S. multimillionaires*

DIGGING stumps on a summer afternoon in 1851, Lige Welch rested to talk to teamsters who were hauling Brass from Waterbury to the clock-making capital of Bristol. Good-naturedly, he told them he was going to put them out of business, for, he said: "I can't move the Naugatuck, but I can *and will* build a Brass mill in Bristol."

Bristol Brass and Clock Company's first president, Israel Holmes, heard about this and decided here was a man to join up with, since he couldn't be licked. So on August 5, 1851, Elisha Welch became the second president of Bristol Brass. That was the year of the rise of Louis Napoleon, of the first World's Fair (in London), of the first stirrings of a political group later known as the GOP. Soon came the War Between the States, during which Welch won Bristol's vote for Breckinridge against Stephen Douglas, for he feared that a Southern defeat would mean the end of Bristol's clock industry.

Welch continued as Bristol Brass president to the day of his death, August 2, 1887, when he had built the company's business to new highs. Also, with the first oil well drilled in Titusville, Pa., in 1859, he set up another company to make burners for kerosene lamps. And Bristol Brass continued to surge ahead, even in hard times, building new business and also new additions to the mill buildings.

This "damn the torpedoes . . . full speed ahead" kind of management has brought Bristol through five wars and more depressions and "recessions" than you can count. It has become a Bristol tradition that is stronger today than ever before . . . that as long as there is one man alive who wants good Brass sheet, rod, and wire on a certain day . . . then, come hell or high water, *he's going to get it the way he wants it, and when he wants it*. . . from Bristol. And that means *you*, too, no matter what your product.

*One Hundred Years of BRASS made* "BRISTOL FASHION"

*Like the world-famed merchant ships from Bristol, England . . . Always prompt, shipshape, reliable*

*The* BRISTOL BRASS CORPORATION, *makers of Brass in Bristol, Conn. since 1850*

## Light Sander

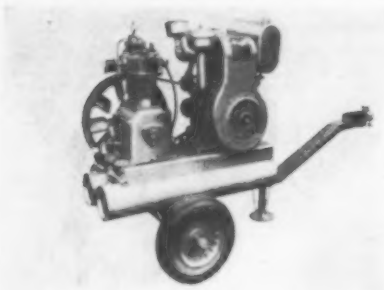


For shops requiring only intermittent sander use, Black & Decker Mfg. Co., Towson 4, Md. offers a light weight portable electric 7-inch "Junior" unit. It is recommended for light sanding, metal finishing, touch-up body work, removing rust, wood surfacing, and similar operations.

The sander is a side handle model with a convenient reversible auxiliary side handle for either right or left handed use. The tool weighs 8 lbs. Housings are aluminum castings. No-load spindle speed is 3,500 rpm. The sander is powered by a universal motor for operation on a-c or d-c currents and is available for 115 or 220 volts. On special order, 125 or 240 volt motors can be supplied.

**No. 105 — For further information see Page 19.**

## Portable Compressors



A line of trailer-mounted portable compressors for operating small air tools on miscellaneous service jobs has been developed by Gardner-Denver Company, Quincy, Ill. Their capacity is said to be ample for operating spray guns, chipping hammers, spaders, tampers, and similar pneumatic equipment.

The units are furnished complete with air cooled compressor, with V-belt drive to gasoline engine, mounted on a sturdy pipe tank type base. They are equipped with semi-pneumatic rubber tired roller bearing wheels, drawbar, trailer hitch and stabilizer leg. They can be readily towed behind a car or service truck.

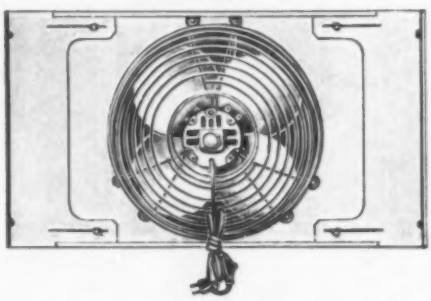
**No. 106 — For further information see Page 19.**

## Tool, Die Steel

Ry-Alloy ground flat stock is the name of an oil hardening tool steel designed for making dies, jigs, tools, stamps, fixtures, machine parts, etc. It is available from Joseph T. Ryerson & Son, Inc., Chicago 80, Ill. The steel is accurately ground on all four sides, with thickness limits held to plus or minus .001". Ryerson says the steel requires only cutting to shape and finishing the cut edges to complete many parts. It may be hardened to Rockwell C-61 hardness or higher, which is equivalent to file-hard. The steel is available in a wide range of sizes.

**No. 107 — For further information see Page 19.**

## Window Fan



Inexpensive but effective ventilation is provided by this new "junior" 16" window fan, according to The Emerson Electric Mfg. Co., St. Louis 21, Mo. The single-speed fan is equipped with mounting panels which are adjustable 27½" to 36" in width, between window stops. A safety guard on room side offers protection against contact with fan. Four large quiet-type aluminum blades deliver 2000 cubic feet of air per minute. Finished in baked ivory enamel.

**No. 108 — For further information see Page 19.**

## Low Hydrogen Electrodes

A complete new line of low hydrogen electrodes is now being produced by Harnischfeger Corporation, 4400 W. National Ave., Milwaukee 14, Wis., manufacturer of P&H arc welders and electrodes. There are 14 different types in the series, covering all applications where such electrodes are desirable. Each has been thoroughly tested in laboratory and in the field, Harnischfeger states. The coatings were developed to produce deposits low in hydrogen, thereby eliminating the under bead cracking. The electrodes are said to produce excellent welds on problem steels and other alloy steels, including steel castings. They have a moderate penetrating arc with an easy to remove slag.

**No. 109 — For further information see Page 19.**

## Disc File

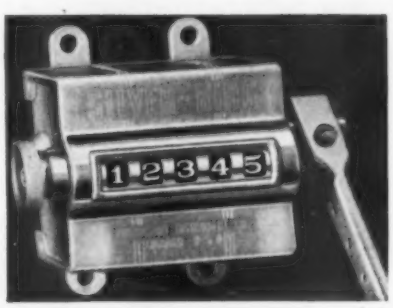


Kennametal Inc. Latrobe Pa. says its new disc file will provide faster, less costly operations on non-ferrous metals and plastics commonly performed by grinding. These include snagging castings, cutting off flashing, facing and squaring up surfaces, etc.

Triangular prisms of Kennametal (90.0 Rockwell A) are copper-brazed to the face of a steel back-up plate, in a number of courses, to form a multiplicity of sharp, sturdy cutting edges. Material is removed in sizable chips, without abrasive dust, producing a smooth, true surface, Kennametal claims. When file is run at proper speed, it is said, workpieces remain cooler than with abrasive wheels because chips dissipate the heat of cutting. Available in 6", 8", 10" and 12" diameters.

**No. 110 — For further information see Page 19.**

## Stroke Counter




Protection against tampering is featured in Silver King heavy duty stroke counters, made by Production Instrument Company, 708-14 W. Jackson Blvd., Chicago 6, Ill. A built-in device prevents reverse operation of the reset mechanism. Any tampering with the reset knob is easily detected, the maker states. The counters have steel base and cover with chromium finish, lightweight plastic number wheels for reduced inertia, and unbreakable windows of reinforced plastic. They are said to be especially suited for punch presses, drill presses, milling machines, etc.

**No. 111 — For further information see Page 19.**

(*Please turn to page* 146)

# CALL YOUR SPANG CW DISTRIBUTOR WHEN YOU WANT...



# A Million Dollars Worth of Satisfaction

The fine performance of Spang CW Pipe has made it a favorite in closed, hot water heating systems for more than 60 years. It's no wonder then that it has been equally accepted for its modern contemporary . . . radiant heating, which has become so popular in homes, commercial and industrial buildings.

What's more, Spang CW Pipe has some very desirable qualities that make it particularly suitable for radiant heating applications. It's easy to weld, cut and bend. Spang CW also has plenty of strength to resist crushing and other mechanical injuries. And it has practically the same co-efficient of expansion and contraction as concrete and plaster. Add to these the advantages of low cost and long life, and you have a highly desirable piping material that will deliver a million dollars worth of satisfaction.

Next time you need pipe, fixtures, fittings, valves or any other piping materials, call your Spang CW Distributor. You'll like him and all the products he has for sale.

**SPANG-CHALFANT**

**Division of The National Supply Company**

**EXECUTIVE OFFICES: PITTSBURGH, PA.**

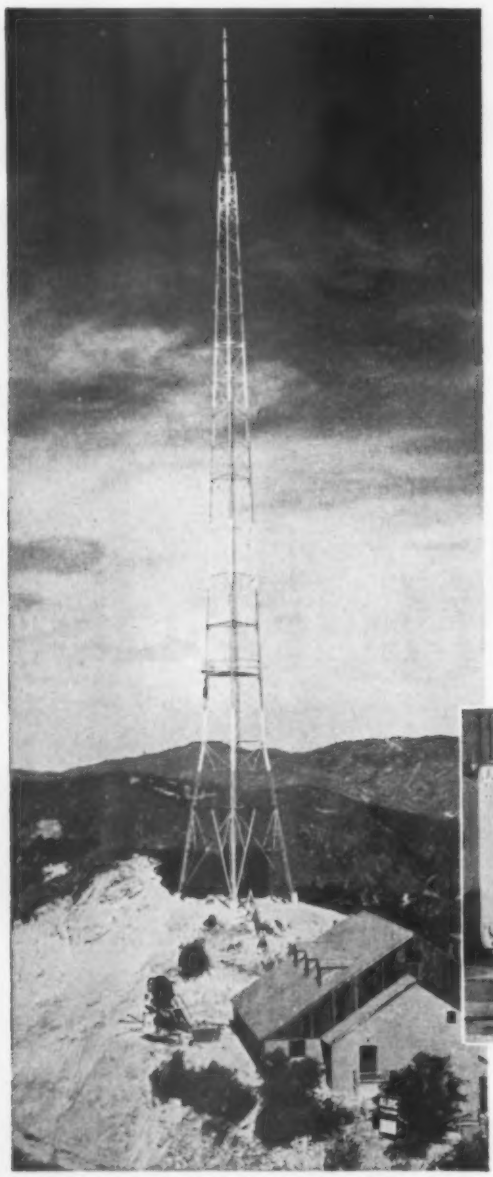
**District Sales Offices: Atlanta; Boston; Chicago; Detroit; Houston; Los Angeles; New York; Philadelphia; Pittsburgh; St. Louis; San Francisco**

**SPANG CW**

**QUALITY** *that is recognized wherever pipe is used*



# BASIC FORMULA FOR PURCHASING MEN . . . M=PT . . . . .

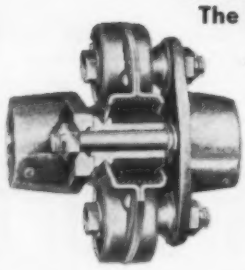


APPLY the formula M = PT (Morse means Power Transmission) when ordering couplings because Morse Chain makes the most complete line of flexible couplings available, all especially adaptable to your engineer's design needs.

**Front-end power take-offs,** flywheel coupling applications, cooling tower drive shafts and Diesel-electric generator sets (as illustrated below) have all proved the successful performance of Morse couplings through exhaustive field service.

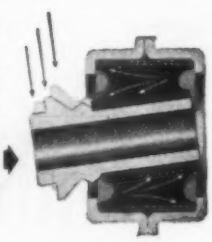
Always remember to follow the formula M = PT (Morse means Power Transmission) for best results on coupling applications and *all other* mechanical power transmission problems. Morse products are immediately available from your local distributor's stocks.

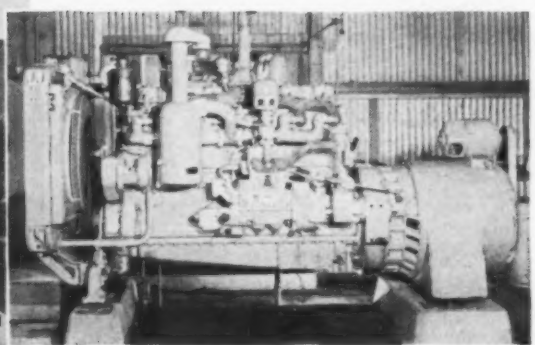
## Morse Has 4 Types of Flexible Couplings— The Right Coupling for Your Application



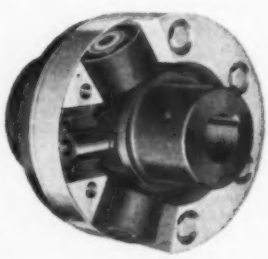
**Morse Morflex Couplings,** available in single, double and "Junior" types, are torsionally flexible, transmit power smoothly, isolate vibration, absorb shock loads. Require no lubrication or maintenance.

Morflex Couplings compensate for misalignment through elastic deflection of Neoprene "biscuits"—no metal-to-metal contact.





**Your favorite television program** comes to you from TV transmitters like this one atop Mt. Wilson. Diesel electric sets, equipped with torsionally flexible Morflex Couplings, guarantee the flow of electric current in the event of power-line failure.



**Morse Radial Morflex Heavy-Duty Couplings** use the same Neoprene "biscuits" assembled radially. All Morflex Couplings are impervious to water, dirt, oil and weather—never require lubrication or maintenance.

CLIP COUPON . . . PASTE ON POST CARD . . . MAIL TO MORSE!

Morse Chain Company
7601 Central Ave., Dept. 513
Detroit 8, Mich.

Please send me latest technical data and specifications on:

Morse Morflex Flexible Couplings ☐

Morse Roller and Silent Chain Flexible Couplings ☐

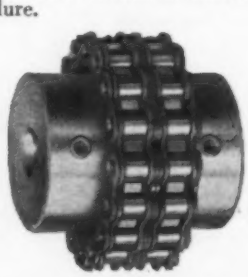
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Title_____

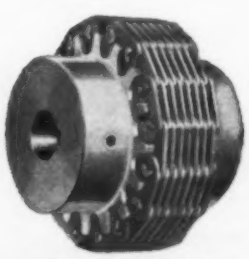
Company_____

Address_____

City_____ Zone____ State_____



**Morse Roller Chain Flexible Couplings,** with double chain, have increased chain-sprocket bearing area, are compact, easily installed, durable, low-cost. Morse Roller Chain Couplings compensate for misalignment, provide positive power transmission. Available in wide range of stock and special sizes, with either steel or plastic covers.



**Morse Silent Chain Flexible Couplings** distribute the load so that unit stresses are small and uniform, service life is longer. The silent chain has a central guide link, which fits between coupling sprockets and centers the chain in relation to the coupling, permitting endfloat and endwise assembly or disassembly. Send coupon.

# Morse means Power Transmission


Morse Roller Chain Drives

Morse Silent Chain Drives

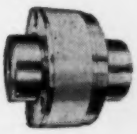

Morse Roller Chain Couplings

Morse Silent Chain Couplings



Morse Morflex Couplings

Morse Morflex Radial Couplings



Morse Morflex Drive Shafts


Morse-Formsprag Clutches

Morse-Rockford Clutches



Morse-Rockford Pullmore Clutches

**Ask the Morse Man for power transmission information!**

**100 Morse Branch Offices and Distributors to supply your power transmission demands.**



From coast to coast there are more than 100 offices, representatives and distributors of Morse Power Transmission products to give you quick information and service when you want it—where you want it. *Ask the Morse Man first in any case!* Check your classified phone directory under **"Power Transmission"** or **"Chains"** for the nearest Morse Man.

**MORSE**

**MECHANICAL POWER TRANSMISSION PRODUCTS**

PRODUCTS OF B-W BORG-WARNER

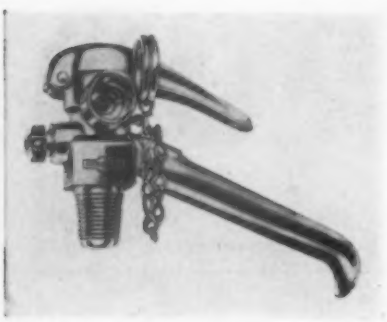
## Speed Reducer



The Torque Arm speed reducer, which mounts directly on the shaft to be driven and eliminates the need for special engineering, is offered by the Dodge Manufacturing Co., Mishawaka, Ind. Available as a "package" item, the reducer is said to have exclusive design features which make possible important savings in installation. It is intended primarily for conveyors, bucket elevators, agitators, mixers, feeders, processors, etc. The unit consists of a reducer with a fixed ratio of 15 to 1, driven by a motor through any V-belt or flat belt drive. Any desired output speed from 13 to 133 rpm can be obtained through the use of stock sheaves. A torque arm anchors the reducer and provides quick, easy adjustment of the belt tension through the use of a turn buckle. Bulletin No. A-470 available.

**No. 112 — For further information see Page 19.**

## $CO_2$ Extinguisher Valve



A compact Handigrip valve tested and approved by Underwriters Laboratories for use on all listed $CO_2$ fire extinguishers is offered by the Kerotest Manufacturing Co., 2525 Liberty Ave., Pittsburgh 22, Pa.

The new valve features a convenient carrying handle and operating lever designed to give instantaneous thumb tip control for the flow of gas and afford a natural grip at all times. It is furnished for either direct horn, or hose and horn operation, and can be used on 2 to 20 lb. $CO_2$ extinguishers. A locking device enables the valve to be secured in either the open or closed position, or sealed when not in use. The valve has an operating efficiency from minus 40F to plus 140F.

**No. 113 — For further information see Page 19.**

## Lubricant Bucket Pump



Lincoln Engineering Co., 5783 Natural Bridge Ave., St. Louis 20, Mo., has a new portable, high pressure bucket pump for use with the company's centralized single line lubrication systems. The pump is designed for delivering lubricant to circuits of Centro-Matic lubricant injectors installed on one or more machines not equipped with pump, or where machines are not grouped, making it impractical to use a centralized pumping unit. The unit is designated Model 1808 and has a 30-lb. lubricant capacity. It includes a Flex-O-Matic coupler with adapter for assembly to the manifold inlet of the most easily accessible bank of injectors on the machine. The pump is 23″ high, 16¾″ wide and 4¾″ deep. Bulletin 800-1 available.

**No. 114 — For further information see Page 19.**

## Outdoor Reflector Lamp

A 300-watt weather-proof incandescent reflector lamp for outdoor lighting applications has been added to the line of Sylvania Electric Products, Inc., Salem, Mass. Known as the R-40 (designating a reflector bulb 5″ in diameter) the lamp is enclosed in a heat-resistant glass bulb which absorbs the thermal shocks caused by rain, snow, insects, oil and other elements. Sylvania says there is no restriction on the burning position of the lamp, which has a rated average life of 1000 hours, although its resistance to thermal shock is said to be somewhat better when operated in a base-up position. The lamp operates on 115, 120 and 125 volts, and has a mogul screw base.

**No. 115 — For further information see Page 19.**

## Gear Motor



Century Electric Company, Gear Motor Division, 1806 Pine St., St. Louis 3, Mo., has extended its present line from ⅛ to 1½ hp with a 1½ hp gear motor. Larger ratings up to 400 hp are available with gear attachments. The motors are for operation on single or polyphase alternating or direct current. Speeds of from 25 to 280 rpm may be obtained in the motors, which are completely Century built. Additional features are: only two moving parts, the armature shaft and the output shaft; only four bearings, two ball and two roller; gears are rugged "worm type".

**No. 116 — For further information see Page 19.**

## Sheet Cutting Machine



The American Pullmax Company, Inc., 2627 North Western Ave., Chicago 47, Ill., has introduced its new Model P-5 sheet steel and plate cutting machine. It is capable of straight, circular and irregular cutting, in addition to folding, beading, and slotting.

The mechanism is entirely enclosed and operates in an oil bath. Circle cutting and straight cutting attachments have quick locking devices that permit size changes in one movement for faster operation and production work. The machine has an edge cutting capacity from finest gages up to 7/32″ in mild steel. It cuts circles from 3-5/32″ up to 40″ in diameter, and has a throat depth of 42″.

**No. 117 — For further information see Page 19.**

(*Please turn to page* 148)

# MESTA Forgings




Mesta Forge Shops are equipped to produce, from raw material to finished product, carbon and alloy steel forgings in all sizes required by industry, including crankshafts, marine parts, rotor shafts, rolls, pinions, pressure vessels, pump blocks, table rollers, coupling halves, spindles, gears, and many others.

The illustration shows a one-piece forged steel high pressure accumulator bottle for a 6,000-ton hydraulic forging press. It was produced complete in the Mesta Plant.

Write for descriptive forging literature.

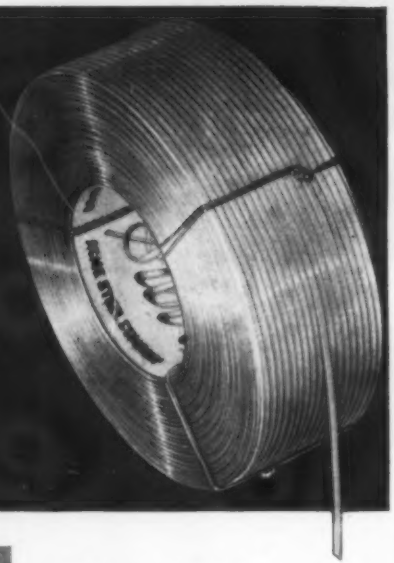
DESIGNERS AND BUILDERS OF
COMPLETE STEEL PLANTS

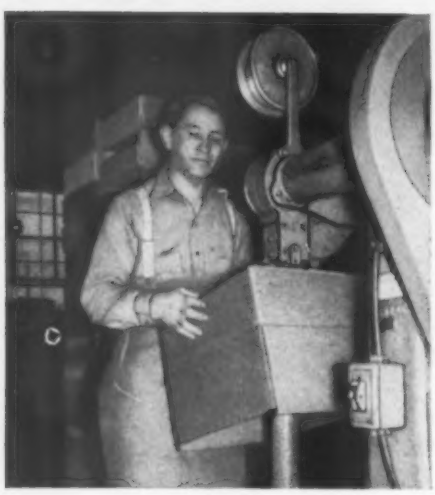
**MESTA MACHINE CO.**

PITTSBURGH, PENNSYLVANIA

# ACME SILVERSTITCHER

**cuts the cost of carton assembly and closure**





*Stitches are formed in one operation from a continuous-length coil of Acme Silverstitch wire.*

Carton bottoms are stitched neatly and securely on this Acme Post-Type Silverstitcher.

## How tile manufacturer cut labor costs in half!

By stitching the bottoms of corrugated cartons instead of hand gluing them, one operator working full time on one shift can turn out 1,500 cartons per day for west coast tile manufacturer. Under the old method, two shifts of operators were required for the same production.

Not only is the new carton neater and stronger, but considerable space (which was at a premium) has been saved by the change in methods.

This is typical of the savings that can be effected by using Acme Silverstitchers and Silverstitch wire. Find out what they can do for your packaging operation . . . at no obligation! Write direct about your specific problem, or mail the coupon below.

STITCHING WIRE DIVISION

**ACME STEEL COMPANY**

NEW YORK 17 ATLANTA CHICAGO 8 LOS ANGELES 58

ACME STEEL COMPANY, Dept. P- 30
2838 Archer Avenue, Chicago 8, Illinois

☐ Send free booklet, *"Profit by Stitching."*
☐ Have representative call.

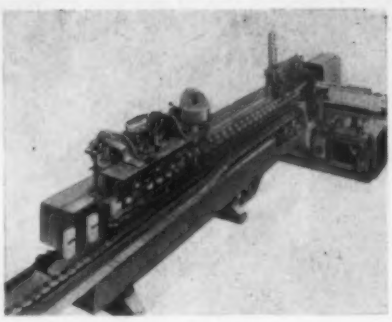
Name _____

Company _____

Address _____

City _____ Zone ____ State _____


## Semi-Automatic Cartoner



A new cartoning machine, the Jones CMV, can be quickly adjusted for an infinite number of carton sizes ranging from a minimum of ½" x ¾" x 2½", to a maximum of 3¼" x 3¼" x 8". It is manufactured by R. A. Jones & Company, Inc., P. O. Box 485, Cincinnati 1, O. Jones says it is especially useful for short runs of many sizes or where the nature of the load is such that fully automatic handling is not feasible. Machine speed can be quickly changed throughout a range of 25 to 120 cartons per minute. One operator can easily insert bottles, tubes, or similar products at 100 per minute, maker states. Where corrugated liners, leaflets, or other inserts are used, space is available for additional operators. Literature available.

**No. 118—For further information see Page 19**

## Midget-Size Busduct



Power Plugin, a new midget-size Busduct of 50-amp. feeder capacity, has been developed by the Frank Adam Electric Co., 3650 Windsor Place, St. Louis, Mo. It is approved by Underwriters' Laboratories for equipment requiring connections for ½ to 3 hp motors, 240 volts or less, a-c or d-c; or for 7½ hp maximum with dual-element fuses. The duct is 3" wide by 2" deep and is made in standard 5' and 10' lengths with plug-in outlets every 20". Additional outlets and longer lengths are available on specification for special application. The duct can be fastened by straps to the wall, ceiling or along the back of or under a machine bench, or supported by hangers from ceiling or roof. Bulletin available.

**No. 119—For further information see Page 19**

(*Please turn to page* 150)

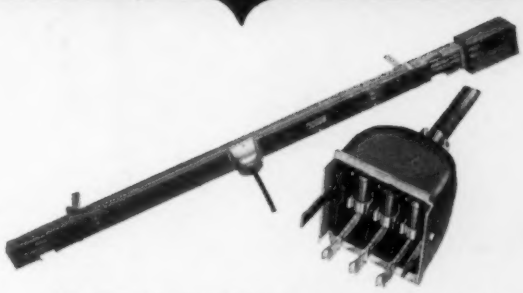



# PLUGIN (FA) BUSDUCT

**YOUR ELECTRICAL DOLLARS WILL GO MUCH FARTHER** with Plugin (FA) Busduct . . . because here's an electrical distribution system designed to economize on everything but efficiency.

By providing convenient plug-in outlets every foot of the way, there's always a ready power source for new or present equipment anywhere along the production line . . . just plug-in wherever you want . . . no slowing down production to make needed changes . . . no expensive wiring delays . . . no high cost electrical maintenance . . . in fact, there's nothing much to do but *plug-in and let 'er roll.*

Add up these and many more cost-cutting features of Plugin (FA) Busduct . . . and you'll agree that here is the electrical distribution system that makes ends meet in more ways than one.



**(FA) POWER PLUGIN,** the new midget-size Plugin (FA) Busduct of 50-amp. feeder capacity, is now available for equipment requiring connections for ½ to 3 HP motors, 240 volts or less, AC or DC (7½ HP maximum, with dual-element fuses).

Featuring all the convenience, flexibility and economy of Plugin (FA) Busduct, this new Underwriter Laboratories approved duct is made in 5-ft. and 10-ft. sections with plug-in outlets every 20 inches . . . additional outlets and special lengths available on special order.

*For more information about Plugin (FA) Busduct and (FA) Power Plugin, write for Bulletins 701 and 703 . . . or talk to your (FA) Representative (he's listed in Sweet's).*

FA TRADE MARK

## *Frank Adam Electric Co.*

ST. LOUIS 13, MISSOURI

*Makers of* BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

# PIPE VISE

## *plus... a handy work bench*




## RIDGID Tristand's tray keeps all your tools in easy reach

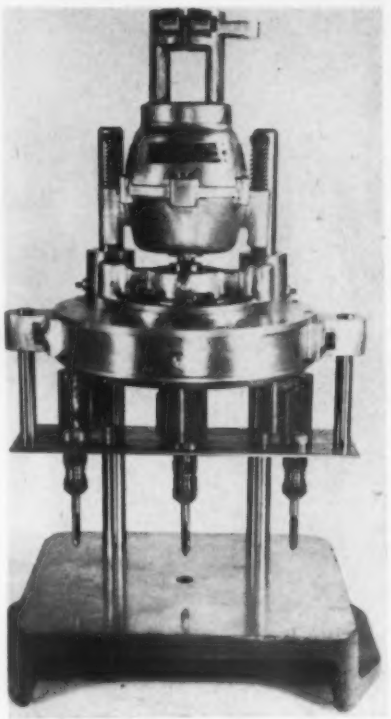
● No stooping, less fatigue and speedier work now that you don't have to bend over every time you change tools. New tray attaches in a jiffy, makes Tristand rigid so it can't fold up in use. Legs have rubber feet to prevent creeping. RIDGID's LonGrip tool-steel jaws won't slip, won't mar polished pipe and tubing. Yoke vise, 2½" capacity; chain vise, 4." Buy new work-saver RIDGID Tristands from your Supply House.

RIDGID

WORK-SAVER PIPE TOOLS

THE RIDGE TOOL CO. • ELYRIA, OHIO


## Adjustable Spindle Multiple Drilling-Tapping Head



Flexibility in drilling or tapping parts with hole sizes up to and including 5/16″ in steel (on any type drill press) is made possible with new convertible adjustable spindle multiple head announced by the Ettco Tool Co., Inc., 594 Johnson Avenue, Brooklyn 6, N. Y. Rapid and accurate spindle adjustments can be made from a minimum center distance of 1-1/16″ to a maximum center distance of 7⅝″. Spindle can also be located at any point within a 3-5/16″ dia. circle. The template method makes it a simple matter to locate spindles accurately for a given hole combination and to change their location swiftly from one drilling or tapping operation to another. The adjustable spindle multiple head is available with 2, 3, 4 or 5 spindles. Bulletin #35 describes this combination drilling-tapping head in detail.

**No. 120—For further information see Page 19**

## Daylight Projector

Vu-Graph is a new visual aid unit that projects a brilliant image in a fully lighted and ventilated room, with no special projection facilities required. The speaker faces the audience at all times, and the image appears on the screen behind him. He can project any subject matter that can be drawn, printed, typed or photographed onto a trans-

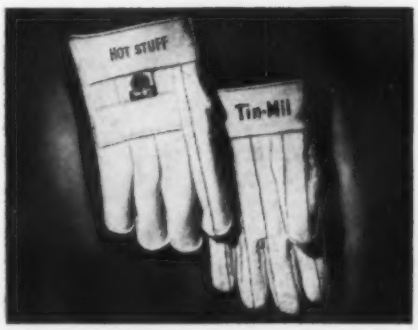
(*Please turn to page* 152)



# tops in the field



**CANTON FLANNEL GLOVES**
The best glove for general all-round work. Available in a full range of weights and styles for every need . . . including knit wrist, gauntlet cuff, band top and reversible.




**HOT MILL GLOVES**
Ideal for steel and tin plate mills or wherever protection against heat is required. Extra large to slip off easily. Inseam and outseam styles.

**Here's a tip for workers who must be dressed for skill. Just use the right Riegel Work Glove on every job. You'll find them tops in wear, tops in comfort and tops in dollar value. Workers everywhere who use their hands . . . and their heads . . . take off their hats to Riegel for work gloves that please in every way.**

**Write for a catalog and prices . . . see why Riegel Work Gloves are tops in the field for quality and for value.**

**RIEGEL TEXTILE CORP., 342 MADISON AVE., NEW YORK 17, N. Y.**

Riegel WAGON BRAND WORK GLOVES

**Riegel**
**WORK GLOVES**

HERE'S **POSITIVE** LOCKING ACTION!




Cross-section of An-cor-lox and bolt showing locking ring after flattening.




Not necessary for bolt to come through nut. Locking ring on bottom of nut.

Thread fit NOT important.

Vibration and shock will not walk nut off—will only force locking ring farther into bolt threads.

Bolt stretch, wear, moisture do not affect gripping power.

Up to softening point of the metal, high temperatures do not lessen locking grip.

Crushed locking ring prevents passage of gas and liquids.

Nut can be re-used many times.

*Available in high, thin, cap or spanner designs.*

SEND *for* TEST SAMPLES *and* CATALOG

**An-cor-lox** TRADE MARK REGISTERED *Lock Nuts*

LAMINATED SHIM CO., Inc., *An-cor-lox Division,* 2403 Union St., Glenbrook, Conn.

AN-COR-LOX NUTS • SHIMS • SHIM STOCK • STAMPINGS



# Important Facts on Better Packaging

**. . . are now available by writing for a copy of the new Cleveland Container folder.**

Learn the advantages of various types and sizes of Cleveland Containers.

It shows new ways to obtain eye-compelling attractiveness . . . with many other advantages. Send for your copy at once.

Visit our BOOTH NO. 208 at the 19th Natl. PACKAGING EXPOSITION in Chicago

*The* CLEVELAND CONTAINER *Co.*

6201 BARBERTON AVE. CLEVELAND 2, OHIO

• All-Fibre Cans • Combination Metal and Paper Cans
• Spirally Wound Tubes and Cores for all Purposes

PLANTS AND SALES OFFICES: Cleveland, Detroit, Chicago, Plymouth, Wisc., Jamesburg, N. J., Ogdensburg, N. Y. • ABRASIVE DIVISION at Cleveland SALES OFFICES: Grand Central Terminal Bldg., New York City; Washington Gas Light Bldg., Washington, D. C.; West Hartford, Conn.; Rochester, N. Y. Cleveland Container Canada, Ltd., Prescott, Ontario • Offices in Toronto and Montreal



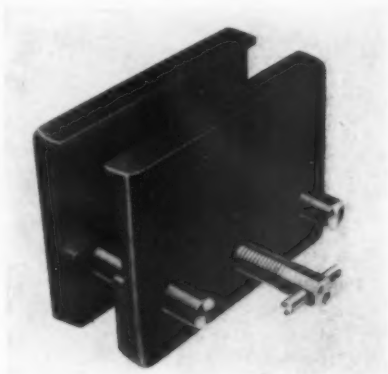
Ask for a copy of our No-Lap Catalog on Abrasive Sleeves, Drums and Belts.

(*Continued from page* 150)

parency in either color or black and white. A convenient acetate roll attachment provides a writing surface which permits quick reference to previously written material. Accessories include a slide attachment for projecting 3¼" x 4" or 2" x 2" glass slides. The projector is distributed by Vu-Graph Sales Co., 1025 15th St., NW., Washington 5, D. C.

**No. 121 — For further information see Page 19**

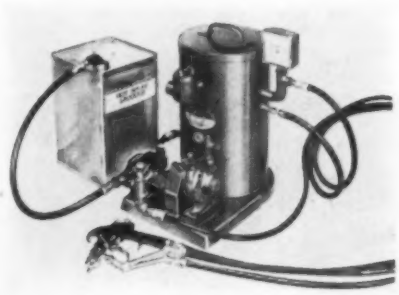
## Chain Vise



A new chain breaking vise incorporating many exclusive features has been announced by the Morse Chain Co., division of Borg-Warner Corp., 7601 Central Ave., Detroit 8, Mich. The vise accommodates all American Standard sizes of roller chain from ½" pitch to 2½" pitch, single and multiple widths. Although changes for the accommodation of different sizes may be made instantly, settings are accurately maintained until readjusted. Morse says precision construction and heat treated alloy steel jaws assure long life at maximum efficiency.

**No. 122—For further information see Page 19**

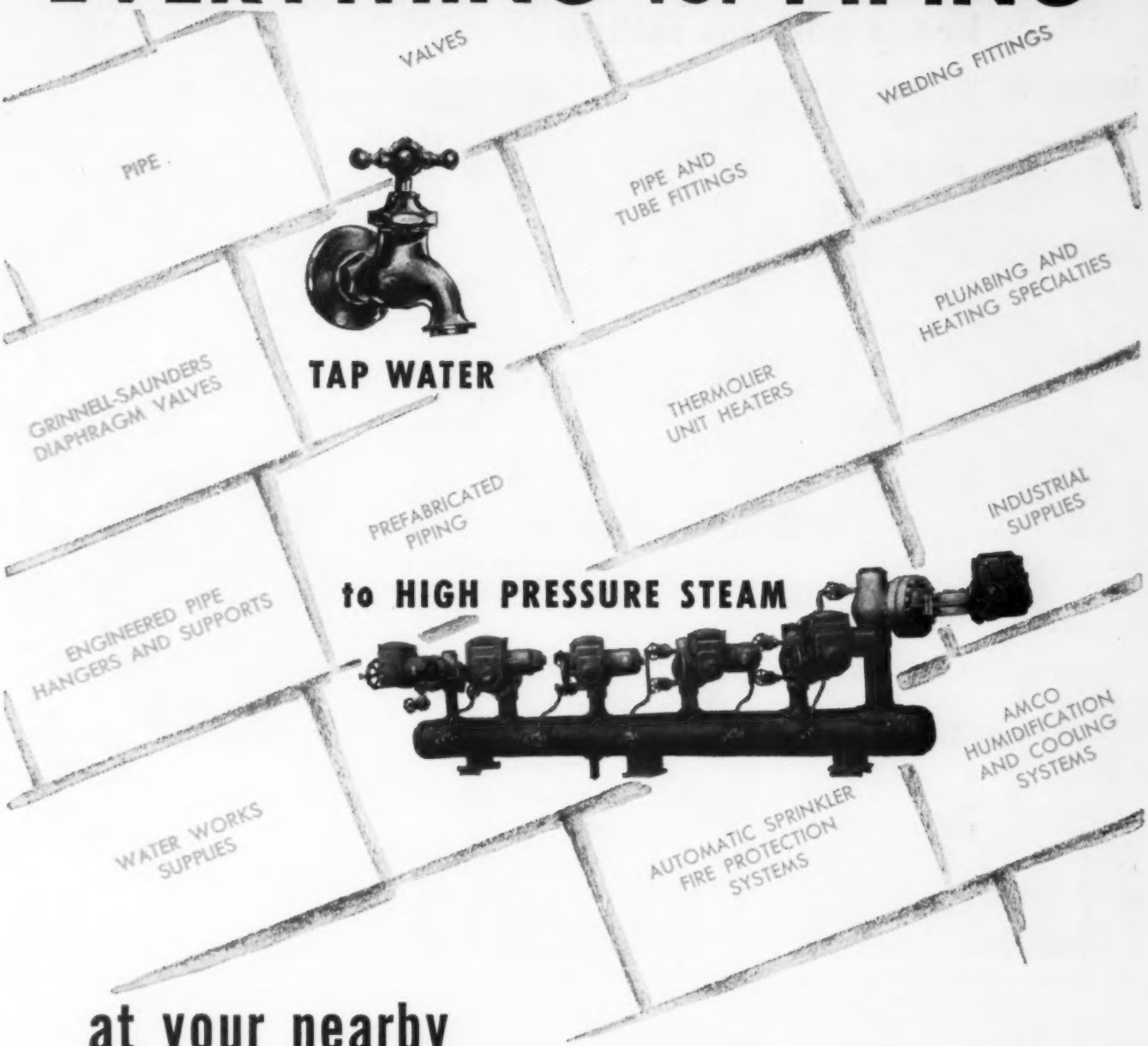
## Paint Heater & Sprayer



A new circulating type paint heater which can spray directly from the paint container without the use of a pressure tank has been announced by Bede Products, Inc., 4311 Ridge Rd., Cleveland 9, O.

(*Please turn to page* 154)

# EVERYTHING for PIPING




## at your nearby GRINNELL WAREHOUSE or JOBBER

More than 1000 Grinnell warehouses and jobbers . . . one within easy reach of your phone . . . are ready to give you prompt delivery on any standard piping product. When the job calls for specialized piping products or installations, Grinnell has the manufacturing facilities, products, experience and engineering knowledge to "deliver the goods."

100th ANNIVERSARY — WHEREVER PIPING IS INVOLVED

# GRINNELL

Grinnell Company, Inc., Providence 1, R. I. Warehouses: Atlanta • Buffalo • Charlotte • Chicago • Cleveland • Cranston • Fresno • Kansas City • Houston • Long Beach Los Angeles • Milwaukee • Minneapolis • New York • Oakland • Philadelphia • Pocatello • Sacramento • St. Louis • St. Paul • San Francisco • Seattle • Spokane


*Want Additional Product Information? See Page 19.*

# Press breaks down — but $2.88 keeps editions rolling



**Press broke down** at 5 P.M., at end of evening edition's run. But this publisher got replacement parts in a hurry the same way he gets electros, mats, news photos —by Air Express. An 18-lb. carton traveled 500 miles, was delivered by 11 P.M. Shipping charge $2.88. Morning edition published as usual.



**Air Express** is the best air shipping buy to keep any business rolling, since low rates include door-to-door service. Answers your problems because Air Express is *fastest* and *most convenient*.



**All Scheduled Airline** flights carry Air Express. So shipments *keep moving*. All business profits from its regular use. Improves customer service; manpower or equipment never stands idle.

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AIR EXPRESS
GETS THERE FIRST

Rates include pick-up and delivery door to door in all principal towns and cities

A service of
Railway Express Agency and the
SCHEDULED AIRLINES of the U.S.


(*Continued from page 152*)

Paint is pumped through the heater from the container by a circulating pump especially designed for hot spray, which also circulates the paint from the heater to the spray gun and return. The paint can be heated to any temperature. Advantages claimed are: ease of paint handling; elimination of extra equipment; easier paint color changes; use of smaller quantities of paint. Available for 110 or 220 volt a-c operation. The air motor consumes 2 to 5 cfm at 40 lbs. air pressure.

**No. 123—For further information see Page 19**

## Pneumatic Wheel



Aerol Co., Inc., 2820 Ontario St., Burbank, Calif., has what it calls the only water-tight, air-tight pneumatic wheel in the world. A spring steel lock ring and flange side ring allow instant tire changing without the use of tools or the necessity of removing the wheel assembly from trailer type.

Construction of the wheel includes Neoprene O-rings and formed cadmium plated steel retainers fitted into the hub to insure a positive air-tight seal which permits immersion in water without loss of operating efficiency or damage to bearings. Condensation will not occur within the hub, according to Aerol.

**No. 124—For further information see Page 19**

YOU WILL FIND NEW SUPPLY-SOURCES LISTED EVERY MONTH IN PURCHASING'S CLASSIFIED SECTION! SEE PAGE 306



TOLEDO, OHIO PLANT NO. 1

# 7

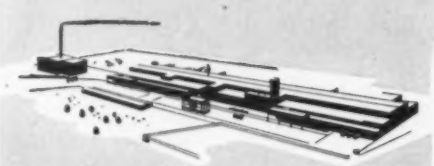
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located strategically to give prompt, dependable deliveries, equipped with the most modern devices for reliable quality products, backed by 50 years' experience.

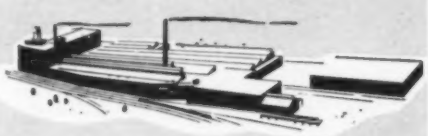
ONE OF OUR ENGINEERS will visit with you upon your request, to confer for best possible results.

OUR REPUTATION is your guarantee for satisfaction whether a small order or a large contract.

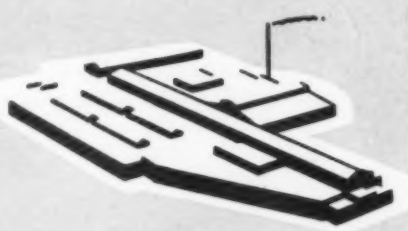
OUR RESEARCH DEPARTMENT offers its assistance for development work.



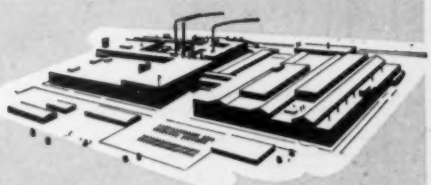
TOLEDO, OHIO PLANT NO. 2



POTTSTOWN, PA.
PLANT NO. 4



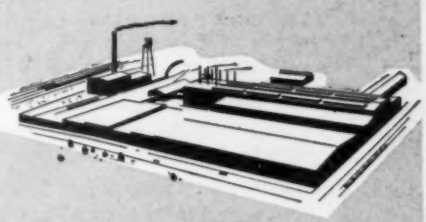
BATAVIA, N. Y.
PLANT NO. 6



GRAND RAPIDS, MICH.
PLANT NO. 3



BATAVIA, N. Y.
PLANT NO. 5



CHICAGO, ILL.
PLANT NO. 7

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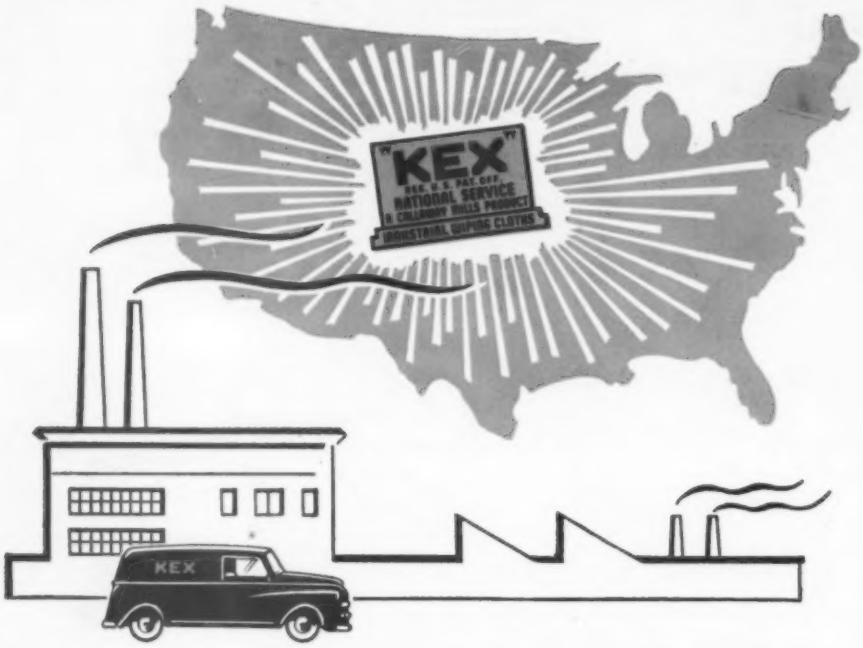
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NEW YORK 16, N. Y.



*Want Additional Product Information? See Page 19.*

# KEX INDUSTRIAL WIPING TOWELS




## ARE DISTRIBUTED NATIONALLY

*Regardless* of where your plant is located, whether large or small, there is a KEX Distributor near you.

**Plant Managers like KEX Service** because it fits so well into their plan for smooth, efficient plant operation—for better housekeeping.

**Plant Engineers like KEX Industrial Towels** because they are *made* for wiping—safe to use... have no ragged edges to get caught in machinery... so soft they will not mar delicate surfaces nor leave excessive lint.

**Purchasing Agents like KEX Service** because it provides a constant, reliable, orderly source for clean, absorbent wiping towels.

**Employees like KEX Towels** because they are *real* wiping cloths, not makeshifts—are good tools with which to do a faster, more efficient wiping job—always the same size, bound for safer use, scientifically clean and readily available.

Follow the lead of industrial leaders who overlook no opportunity to keep operating costs down—and efficiency up. Insist on KEX Industrial Wiping Towels.



**Nothing to buy—no expensive inventory—just a low monthly rental.** Look in your classified telephone book for nearest KEX distributor, or write KEX NATIONAL SERVICE, 295 Fifth Avenue, New York 16.

## "KEX" NATIONAL SERVICE

REG. U.S. PAT. OFF.


## Ceiling Lampholder

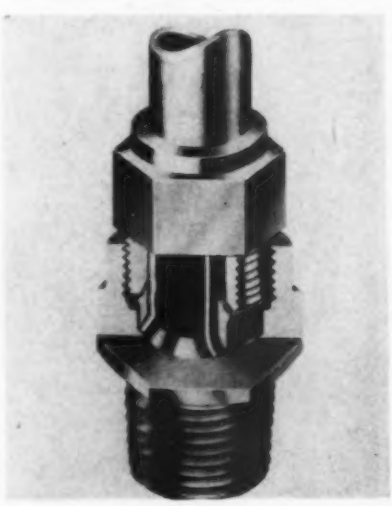



A combination keyless ceiling lampholder on which through-circuit connections are simply made without the use of wire nuts, soldered joints, or taping, has been introduced by Slater Electric & Mfg. Co., Inc., 56th St. & 37th Ave., Woodside, N. Y. The newunit employs four over-size screws. Lampholders with only single terminal screws previously required a splice on through-connections.

The lampholder has built-in sealing ring shoulders which fit snugly over either a 3¼" or 4" box. It is made in two sizes: #276, 4¼" diameter; and #277, 5" diameter. The lampholder is made in heat-resistant white Bakelite that will not warp, discolor, crack, or deteriorate.

**No. 125—For further information see Page 19**

## Aluminum Fitting



Scovill Manufacturing Company, Waterbury 91, Conn., has announced an all-aluminum fitting for use with annealed aluminum tubing. Brass fittings used with aluminum tubing produce a galvanic action,

(*Please turn to page* 158)




. . . *Because*—

# There's a Cost-Cutting Norton Wheel for Every Tool Room Job

**32 ALUNDUM Abrasive—**

This sensational abrasive—new and exclusively Norton—is making outstanding records everywhere. In thousands of tool rooms they are finding that "32" wheels can make substantial savings on all types of sharpening operations on high speed steels. Its unique crystal structure gives grains that are *sharper*—they penetrate sensitive high speed steels more easily, cutting faster and cooler.

**38 ALUNDUM Abrasive—**

The original white abrasive, "38" has been a tool room favorite for forty years and is still popular with many tool grinders. It is the recommended abrasive for sharpening jobs where feeds are very light.

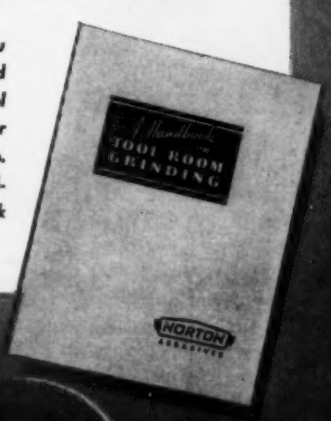
**57 ALUNDUM Abrasive—**

One of the newer Norton abrasives, "57" combines a fast cutting action with great toughness. Thus it is widely used for offhand tool grinding operations. Its slightly lower price also makes it popular for precision sharpening jobs in shops where the first cost of the wheel is given major consideration.

NORTON
ABRASIVES

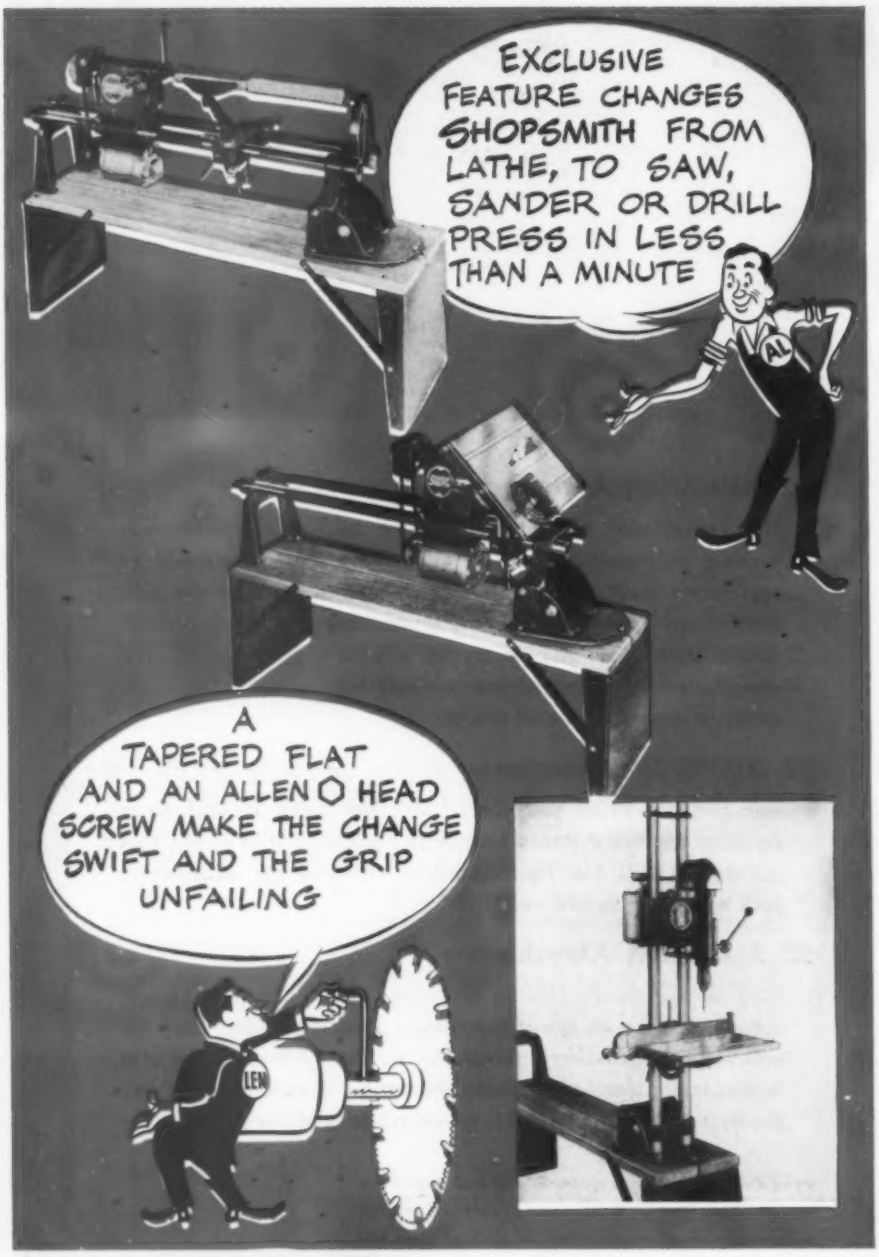
*Making better products to make other products better*

***It's really no trick to save money in your tool room if you have the right Norton wheels – wheels carefully selected to meet the exact requirements of each of your tool grinding jobs. Your Norton abrasive engineer or your Norton distributor will be glad to help in that selection job. You'll find a lot of helpful information in the Norton handbook on tool room grinding. Send for a copy—just ask for Form 835-G2.***






NORTON COMPANY, WORCESTER 6, MASS. · Warehouses in Five Cities · Distributors in All Principal Cities






Magna Engineering Corporation of San Francisco standardizes on Allen ⬡ Head screws and is using more than a million a year for SHOPSMITHS and SHOPSMITH attachments. A particularly important application is the use of Allen ⬡ Head Set Screws to fasten the various attachments to the spindle tip. With more than 30,000 SHOPSMITHS sold the manufacturer has yet to receive one single complaint of an attachment accidentally coming off the spindle.

Where there's an application for a precision fastening the safest, most economical answer is the use of an Allen ⬡ Head screw. This is particularly true when the screw must retain its smooth threading and holding power after long repeated wrenching. *Sold only thru leading distributors.* Write the factory direct for technical information.




**ALLEN** ALLEN HEAD
**MANUFACTURING COMPANY**
**Hartford 2, Connecticut, U. S. A.**
NEW YORK, CLEVELAND, DETROIT, CHICAGO, LOS ANGELES

FOR 40 YEARS THE BUY-WORD FOR SOCKET SCREWS


(*Continued from page* 156)

corroding and weakening the seal. Uniflare design makes a **self-contained**, two-piece fitting, with a self-flaring feature. One turn of the nut, with an ordinary wrench, is sufficient to shear off the collar, and further tightening clamps the collar onto the tube to form a seal which is said to be leakproof. The manufacturer reports tests in which the tube will burst, but not at the joint, before the fitting will leak.

**No. 126 — For further information see Page 19.**

## Work Gloves

Edmont Manufacturing Company, Coshocton, O., is now molding its Neox-coated work glove to give greater comfort and firmer, surer grip, reducing hand fatigue.

Fingers and thumbs of the gloves are molded to the natural position and curvature of the thumb as well as fingers, and with a much wider span between thumb and first finger. The gloves, which Edmont claims outwear 3 to 9 pairs of **ordinary** work gloves, are oil, chemical, cutting and abrasion resistant. They are available in knit wrist and in gauntlet style.

**No. 127—For further information see Page 19**

## Also Noted . . .

Barber-Greene Co., Aurora, Ill., has an easily maneuvered, pneumatic-tired **bucket loader,** Model 543, of special interest to those who have widely scattered stockpiles because of its 15 mph road speed.

**No. 128—For further information see Page 19**

Tinnerman Products, Inc., 2035 Fulton Rd., Cleveland, O., has developed a new "Speed Clip" to **fasten insulation** permanently to sheet metal roofs and walls without adhesives.

**No. 129—For further information see Page 19**

"Luxwood", claimed to be the most authentic photographic reproduction of natural wood grain ever offered in **decorative plastic laminates,** has been introduced by The Formica Co., 4633 Spring Grove Ave., Cincinnati 32, O. Available in mahogany, grey and three shades of blonde.

**No. 130—For further information see Page 19**

Watson-Standard Co., 225 Galveston Ave., Pittsburgh 12, Pa., announces a series of **quick bake finishes** for the metal decorating industry which will cure in 3 to 7 minutes. They will cure properly in **quick** bake cycles and also may be adapted to longer cycles without discoloration.

**No. 131—For further information see Page 19**

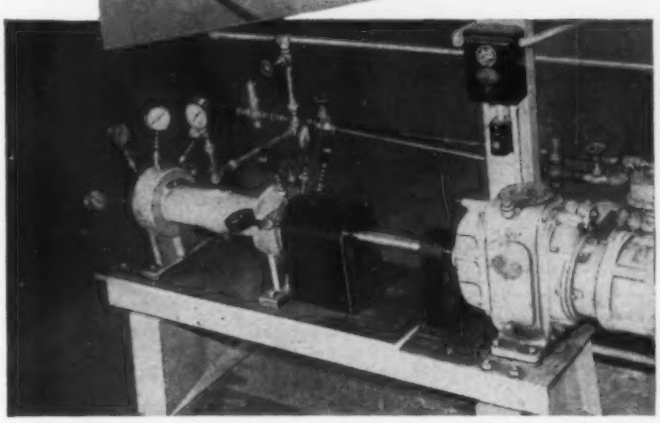
(*Please turn to page* 162)

# PACKINGS FOR EVERY NEED

## Every field of Industry and Transportation saves money with U. S. Rubber Rod and Plunger Packings




**RAILROADS** and all other forms of transportation pick "U. S." brands for packing against hot or cold water, air, saturated steam pressures and all hydraulic conditions. These are U.S. Packings that handle fluids and gases up to 1500 deg. F.—at unlimited pressures.



**U. S. PACKINGS** are tested in the laboratory under conditions that are more difficult than they will encounter on the job. The specially designed centrifugal pump (above) duplicates various working conditions to determine the service life of packings.



**SOLVENTS** in a solution used by this Oliver Dewaxing Filter took the lubrication out of the packings. "U. S." provided a packing which withstood the solvents. There is a U. S. Packing for any job, from ammonia to destructive chemicals at high pressures.

You get absolute reliability of performance from any member of the complete line of U. S. Rubber Company packings. Constant research carried on in the most modern physical and chemical laboratories guarantees the finest in design, materials and workmanship. Whatever your packing problem, it will pay you to consult a "U. S." engineer. Write to address below.

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## Suppose you need UNION Machine Finished Steel Roller Chain...

... and are certain of the pitch, length and sprockets required. Just write or phone your nearest Union Chain Stock Carrying Distributor as listed on the facing page. More likely than not, your requirements will be shipped immediately.

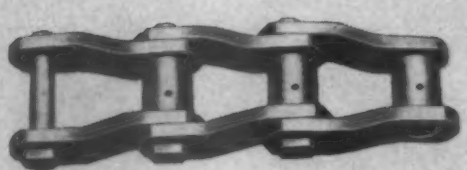
***... or suppose you need*** engineering assistance in the selection of a drive or a recommendation for a conveyor application. Talk or write to Union Chain's nearest district office as listed at the top of the facing page. You will receive unprejudiced, competent help.

***Unprejudiced*** because Union Chain makes all types of steel sprocket chains and is interested in providing each customer with the correct chain for satisfactory service at minimum cost.

***Competent*** because Union Chain representatives are qualified through experience to make sound chain recommendations whether the application calls for roller chain, silent chain or one of the various heavy drive or conveying chains. We suggest it might profit you to discuss your chain problems with us.



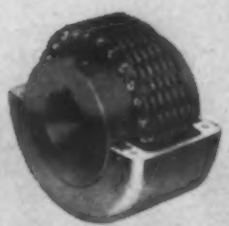
UNION SILENT CHAIN



UNION HEAVY DRIVE AND CONVEYING CHAINS



UNION
ROLLER CHAIN
FLEXIBLE COUPLINGS



UNION
SILENT CHAIN
FLEXIBLE COUPLINGS

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Huntington Park, Calif.

**Haultain Industrial Chain Co.**
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Oakland 7, Calif.

**GEORGIA**
**H. F. Edge**
208 Walton Bldg.
Atlanta, Georgia

**ILLINOIS**
**Union Chain & Mfg. Co.**
**W. Albrecht**
**A. C. Mohr**
**B. Nelson**
Room 1232
53 W. Jackson Blvd.
Chicago, Illinois

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Portland 14, Oregon

**PENNSYLVANIA**
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**David Davies**
P.O. Box 4
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**John A. Shoemaker**
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Philadelphia 2, Pa.

**TEXAS**
**Union Chain & Mfg. Co.**
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**E. T. Teal**
918 Magnolia Bldg.
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**WISCONSIN**
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Milwaukee 3, Wisconsin

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Cor. Troye & Marshall Sts.
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Montgomery, Alabama

**Owen-Richards Co., Inc.**
1009 Second Ave., North
Birmingham, Alabama

**ARKANSAS**
**North Arkansas Equipment Co.**
930 N. College Ave.
Fayetteville, Arkansas

**CALIFORNIA**
**American Chain & Gear Co.**
5511 Pacific Blvd.
Huntington Park, Calif.

**Haultain-Industrial Chain Co.**
239 Twelfth St.
Oakland, Calif.

**Valley Belting & Equipment Co.**
2909 Los Angeles St.
Fresno, Calif.

**CONNECTICUT**
**Motor Equipment Co.**
Wall & Water Sts.
Bridgeport 3, Connecticut

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**L. W. Rapkin Co.**
Third St. & Shipley
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Chicago 16, Illinois

**Hagerty Bros. Co.**
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**W. M. Hales Co.**
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**Service Equipment Center, Inc.**
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**Bearing Service Co.**
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Wichita 2, Kansas

**W. A. Thomas Supply Co.**
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Pittsburgh, Kansas

**KENTUCKY**
**Sherman Bros. Mill Supply**
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**Weaks Supply Co., Ltd.**
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**Woodward Wight & Co.**
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**Bearing Distributors Co.**
1919 Baltimore Ave.
Kansas City 10, Missouri

**Industrial Equipment Corp.**
325 E. Walnut St.
Springfield, Missouri

**Teuscher Pulley & Belting Co.**
801-805 N. Second St.
St. Louis, Missouri

**Wildhagen Machine & Supply Co.**
224 S. Third St.
St. Joseph 5, Missouri

**NEW JERSEY**
**Burton Supply Co.**
390 Union Ave.
Paterson, N. J.

**Old Reliable Supply & Equipment Co.**
11th & Newton Sts.
Camden, N. J.

**Trenton Industrial Supply Co.**
542 E. State St.
Trenton, N. J.

**NEW YORK**
**Industrial Bearing & Supply Co.**
148 Hillside Ave.
Jamaica, N. Y.

**Laurence Belting Co.**
111 Chambers St.
New York, New York

**Power Drives, Inc.**
562 S. Park Ave.
Buffalo, New York

**Transmatic Equipment Co.**
11 North Pearl St.
Albany, New York

**U. & S. Inc.**
600 South West St.
Syracuse, New York

**Ulster Foundry Corp.**
20 St. James St.
Kingston, New York

**NORTH CAROLINA**
**Piedmont Mill Supply Co.**
P. O. Box 130
Salisbury, N. Carolina

**OHIO**
**Brubaker Gear & Mfg.**
Barberton, Ohio

**C. J. Edwards Co.**
5005 Euclid Ave.
Cleveland 3, Ohio

**Lima Armature Works, Inc.**
440 N. Main St.
Lima, Ohio

**Mill & Factory Supply Co.**
317—10th St.
Toledo, Ohio

**OKLAHOMA**
**Ore Reclamation Co.**
301 N. Connell Ave.
Pitcher, Oklahoma

**C. F. Dagwell Co.**
816 W. Main St.
Oklahoma City, Okla.

**OREGON**
**Electric Steel Foundry**
Eugene, Oregon

**Fisher Bros. Co.**
522 Bond St.
Astoria, Oregon

**Industrial Machinery & Supply Co.**
1410 Adams Ave.
La Grande, Oregon

**Industrial Steel & Supply Co.**
North Bend, Oregon

**Klamath Machinery Co.**
Klamath Falls, Oregon

**J. W. Minder Chain & Gear Co.**
307 S. E. Hawthorne Blvd.
Portland 14, Oregon

**PENNSYLVANIA**
**Ace Bearing Co.**
1120 Wyoming
Scranton 1, Pa.

**Bush-Brenner, Inc.**
370 N. George St.
York, Pa.

**Industrial Supply Co.**
451 E. Broad St.
Hazelton, Pa.

**Industrial Transmission Machinery, Inc.**
209 N. Third St.
Philadelphia, Pa.

**PENNSYLVANIA**
**F. R. Magill Co.**
44 McKnight St.
Pittsburgh 20, Pa.

**Maximen Machine Co.**
801 N. Logan Blvd.
Altoona, Pa.

**Reilly Bros. & Raub**
44 N. Queen St.
Lancaster, Pa.

**SOUTH CAROLINA**
**Southern Mill Supply Co.**
Summerville, S. Carolina

**TENNESSEE**
**Hoyt N. Payne Co.**
P.O. Box 942
410 E. Depot Ave.
Knoxville, Tenn.

**Tennessee Machinery Co.**
113-119 Third Ave., South
Nashville 3, Tenn.

**Tipps Engr. & Supply Co.**
260 N. Front St.
Memphis, Tenn.

**TEXAS**
**Allied Belting & Trans. Co.**
2614 Sylvan Ave.
Dallas, Texas

**Beacon Supply Co., Inc.**
1825 Washington Ave.
Houston 10, Texas

**Clowe & Cowan, Inc.**
401 Harrison St.
Amarillo, Texas

**El Paso Machine Works, Inc.**
1600 E. 44th St.
El Paso, Texas

**Lloyd Electric Co.**
511 El Paso St.
San Antonio, Texas

**VIRGINIA**
**Blue Ridge Hardware & Supply Co.**
Bassett, Virginia

**Mill Supplies Corp.**
South Norfolk, Va.

**WEST VIRGINIA**
**Smith Steel Supply Co.**
150 Peninsula St.
Wheeling, W. Va.

**WISCONSIN**
**Dale Industrial Supply Co.**
Wausau, Wisconsin

**Richard E. Ela Co.**
744 Williamson St.
Madison, Wisconsin

**F. D. Haker Co.**
713 South Tenth Street
Milwaukee 4, Wisconsin

**The Union Chain and Manufacturing Company** **Sandusky, Ohio, U.S.A.**

TRANSMIT POWER
UNION CHAINS
CONVEY MATERIALS

# Super-quality industrial gloves for every job!









GUARANTEE BUY 20TH GLOVES ATLANTA, TEXAS

America's most complete line of leather and leather palmed gloves for every conceivable job. Money-Back guarantee stapled into each pair! Cut extra full from super-grade leathers and stitched with finest 4 cord shoe thread. Fancy color Cannon flannel on leather palm styles, more attractive and withstands repeated washings! Packed 6 dozen to carton.

*Free test offer:* ● Save money for your firm! Write Dept. P-1, 2746 No. California, Chicago 47, Ill. for FREE samples and price list. Please specify your job needs and type of gloves now used.

**20th CENTURY GLOVE COMPANY**
ATLANTA, TEXAS
OFFICES IN PRINCIPAL CITIES


*(Continued from page 158)*

An **extension spray gun** for industrial maintenance painting, in lengths at 2′ intervals from 4′ to 12′, is available from the Eclipse Air Brush Co., 390 Park Ave., Newark 7, N. J.
**No. 132—For further information see Page 19**

Latest product of the Apex Machine Mfg. Corp., 53 E. 10th St., New York 3, N. Y., is a hand operated **offset machine** that will print illustrations, decorations, trade marks, etc., in any color on almost all nonporous surfaces, round, flat, concave or convex. It uses type, cuts or electros.
**No. 133—For further information see Page 19**

U. S. Rubber Co., Rockefeller Center, New York 20, N. Y., has a new all-purpose, decorative **rubber floor matting** designed for areas where regular corrugated matting is too light or unattractive and perforated mats are too heavy. It has a waffle-like design, and is produced in black, maroon, red or green.
**No. 134—For further infomation see Page 19**

A new female **live center** designed especially for supporting centerless shafts is now being manufactured by the South Bend Lathe Works, South Bend, Ind. Two sizes are available, one with No. 3 Morse taper shank and maximum work capacity, and the other with a No. 2 Morse taper shank and ¾″ work capacity.
**No. 135—For further information see Page 19**

Never-Slip Safety Clamp Division, Kensico Mfg. Co., Inc., Mt. Kisco, N. Y., is manufacturing a line of **clamps**, both horizontal and vertical styles, for handling plate from ⅛″ to 6″ and up to 12 tons. The part subject to wear—the jaw bearing surface—is a grooved plate.
**No. 136—For further information see Page 19**

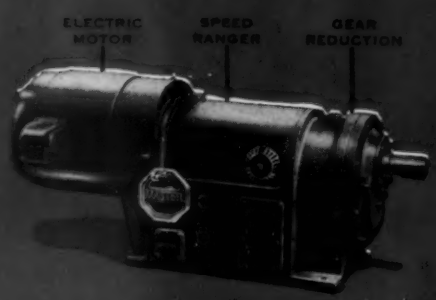
One-ounce **Plaxpak bottles** in natural polyethylene are available to manufacturers for use in the distribution of samples of liquids and powders, according to the Plax Corporation Division, Hartford-Empire Co., Hartford, Conn. The bottle can be mailed unprotected in an ordinary mailing bag.
**No. 137—For further information see Page 19**

Pioneer Chemical & Mfg. Co., 1855 Columbus Road, Cleveland 13, O., has developed a durable **protective finish** for interior and exterior applications it says outwears the best spar varnish by many times. It is claimed to be impervious to acid, alkali, heat or cold, paint remover and solvents, fire or alcohol.
**No. 138—For further information see Page 19**

On thousands of applications in every field of manufacture, stepless variable speed operation assures exactly the right speed for every operation . . . for every operator . . . the right speeds for each change in the consistency or shape of the material being processed. Such variable speed operation pays off in higher rates of production, a more uniform better quality product and more efficient performance of your equipment and your operators.

Master Speedrangers provide this infinitely variable speed in a compact, all-metal, mechanical variable speed unit whose durability and stamina has been proven with millions of hours of service all over the world. And nowhere else will you find units that are so flexible, so easily adaptable and in such a wide range of sizes.

For example, look at the machine shown below. The Speedranger, on the drive unit incorporates an electric motor, a variable speed unit and a gear reduction . . . all standard Master units that easily combine into one compact, integral power package. This provides exactly the right speed, the right features, in a unit that you can mount right where you want it.

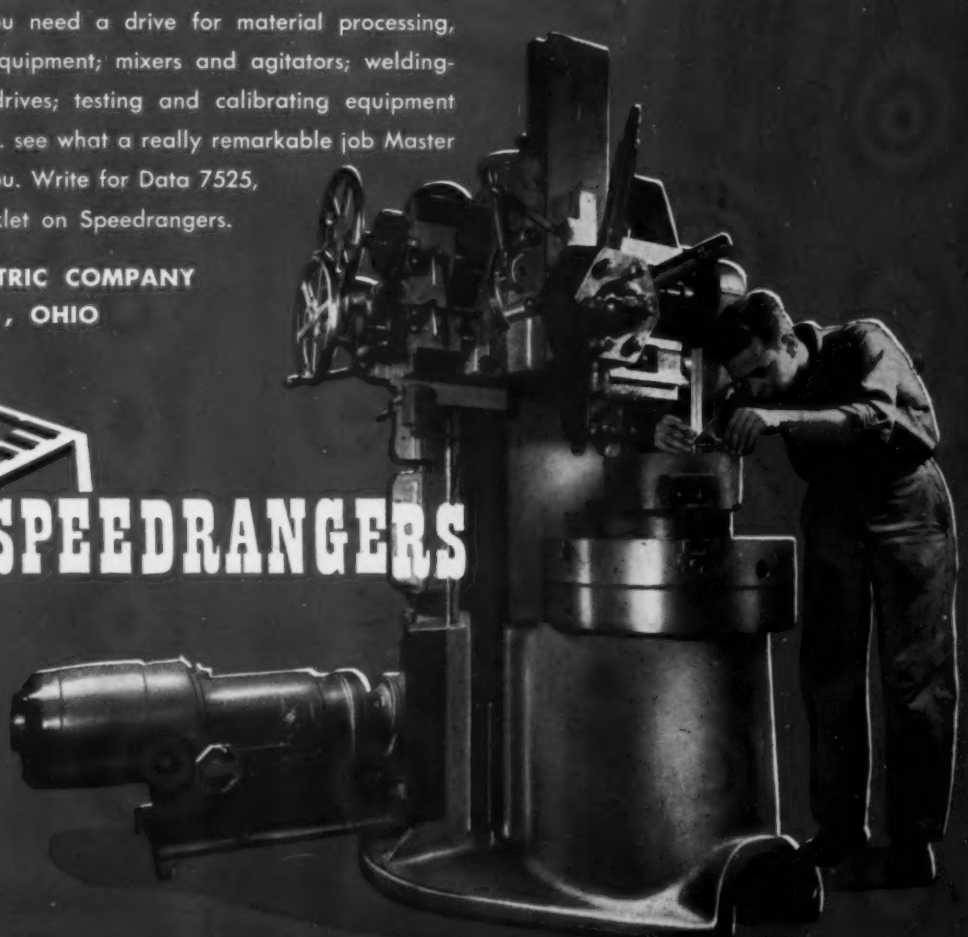



## variable speed operation doesn't cost IT PAYS

Probably you will not need this same combination of features. However, the next time you need a drive for material processing, handling, and conveying equipment; mixers and agitators; welding-positioners; machine tool drives; testing and calibrating equipment . . . to name only a few . . . see what a really remarkable job Master Speedrangers can do for you. Write for Data 7525, new twenty-four page booklet on Speedrangers.

**THE MASTER ELECTRIC COMPANY**
**DAYTON 1, OHIO**

MASTER SPEEDRANGERS



The COMBINATION THAT CLICKS



BEHR-MANNING®

BEHR-M

USE NORTON a

for maximum finishing p

## 1. THE RIGHT BEHR-MANNING CONTACT WHEEL

Many to choose from—large, small, hard and soft. It's the right contact wheel that can make the difference between ordinary results and higher production benefits, lower cost and more uniform finishes.

## 2. THE RIGHT BEHR-MANNING ABRASIVE BELT

These are the belts that cut sharp longer and give you more speed and economy with the kind of finish your work demands. LIGHTNING® METALITE® Cloth Belts for most polishing jobs, RESINALL® METALITE Cloth Belts for tougher stock removal grinding, team up perfectly with the right contact wheels for real finishing profits.

## 3. THE RIGHT ENGINEERING SERVICE "PAYS OFF"

An experienced Behr-Manning field engineer specifies the right belt method and equipment. Local Methods and Demonstration Rooms are available to you at our branches in 16 key industrial cities. And there's the Behr-Manning engineering research laboratory with more than 150 abrasive technicians and engineers insuring you of the latest developments.

## NEW BROCHURE ON BELT FINISHING

Here is the latest on backstand belt grinding and polishing. It's full of illustrations and technical data and it's free for the asking. Just fill in the coupon and mail it today.




R. MANNING
TROY, N. Y.
abrasives SHARPENING STONES

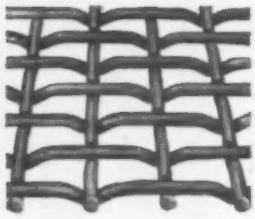
BEHR-MANNING, TROY, N. Y. DEPT. MG-250 ▲▲▲▲
Please send my copy of your new Backstand Brochure.

Name.....

Company.....

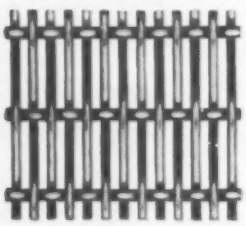
Street..... County.....

City..... Zone..... State.....



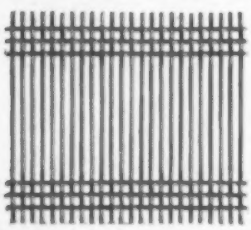
**Specify Roebling Roeflat**

*for maximum wearing surface and accurate sizing*



**Specify Roebling Roeton**

*for increased screening capacity*



**Specify Roebling Roeslot**

*for topmost screening capacity*

WHATEVER your requirements, you'll meet them most efficiently and economically with the right Roebling Woven Wire Screen. Besides the inherent advantages of the constructions pictured above, each of the three is available in Abraso (high carbon steel), Roetemp (oil tempered steel) and in Stainless Steel to beat your own specific problems.

Mail coupon below for information that may help improve your screening operations.

FOR WOVEN WIRE SCREENS . . .

*Today it's Roebling!*

**WOVEN WIRE FABRICS DIVISION**

JOHN A. ROEBLING'S SONS COMPANY

ROEBLING, NEW JERSEY

Woven Wire Fabrics Division
John A. Roebling's Sons Co., Roebling, N. J.

Gentlemen: Please send my copy of Catalog W-903, giving full information about Aggregate Screens.

Name.....

Company.....

Address.....

City.....State.....

A CENTURY OF CONFIDENCE


## PLASTI-CELL, EXPANDED UNICELLULAR POLYVINYL CHLORIDE

Plasti-Cell, a new material of expanded unicellular polyvinyl chloride, was recently announced by The Sponge Rubber Products Company of Shelton, Conn. Emphasizing that the new expanded plastic does not replace their cellular rubber but merely enlarges the company's products, is the statement that Plasti-Cell is inherently thermoplastic, and this disqualifies it for functions now best performed by the cellular rubber.



**Sheets, slabs and molded shapes of expanded unicellular polyvinyl chloride. Item at extreme left is 5½" dia. boat fender billet**

Plasti-Cell is of light weight, ranging from two to 12 pounds per cubic foot. Its light weight plus extremely low water absorption creates great buoyancy. The compression range runs from 1½ lbs. psi (as in life-jackets) to 150 lbs. psi (as in structural sandwich construction). Its insulation value is illustrated by a K factor of .20 or less depending upon density. The material is non-toxic, odorless and imparts no taste, and excellent electrical properties are claimed.

* * *

## COPPER IN PASTE FORM

Copper in paste form, providing substantial savings in the assembly of parts for furnace copper brazing, has been developed by the Metals Refining Company, a division of the Glidden Company, Cleveland, Ohio, according to announcement by J. P. Ruth, Glidden vice president.

Called "Cubond," the paste provides a source of copper that can be applied with more speed and less waste than conventional sources such as rings, foil, slugs and electroplate, Mr. Ruth said.

The pastes are produced in two general types: one with a synthetic petroleum base and the other containing a base that does not change viscosity with changes in temperature.

By incorporating a small amount of finely divided iron powder, a cementing material can be made from copper and used in many cases where loose fits for expansion purposes are required. The cement action holds the copper in place, fills cracks or loose joints and provides fillets to the desired size.

Additional data and samples are available at Metals Refining Co., 1717 Summer St., Hammond, Indiana.

(*Please turn to page* 168)


**LARGE CUT GEARS**



**Cutting three identical spur gears simultaneously at Simonds Gear.**

**Cut Gears for Industrial Needs!**

For special gears in larger sizes—exact duplicate gears for replacements—for every heavy-duty industrial gear application—look to SIMONDS GEAR where specialty gears for heavy industry have been a custom service for more than 50 years. Within easy shipping distance of many heavy industry plants—with a personalized service designed to meet your most exacting specifications—SIMONDS GEAR provides an unusually prompt and efficient service on even the most unusual gear requirements. Sizes range up to 145" dia. in all popular gear-making materials. Send your inquiry today and get acquainted with SIMONDS GEAR Service.

**SPUR GEARS**

**BEVEL GEARS • MITRE GEARS**

**WORMS • WORM GEARS**

**RACKS • PINIONS**

SIMONDS GEARS

**Stock carrying distributors for Ramsey Silent Chain Drives and Couplings. V-Belts.**

**THE SIMONDS GEAR & MFG. CO.**

LIBERTY at 25TH PITTSBURGH 22, PA.



# Good Reamers + PROPER CARE = lower production costs

It's simple arithmetic. And it's good business, too. This PEERLESS High Speed Expansion Reamer is the best you can buy, regardless of price. When it becomes dull it may be expanded and resharpened, not once but many times. The number of times that it may be restored to its original serviceable condition *depends on the care you give it.* For helpful hints on the proper care and sharpening of expansion reamers, ask our nearest Stockroom to send a Service Representative, or . . .

**Telephone Your Industrial Supply Distributor**

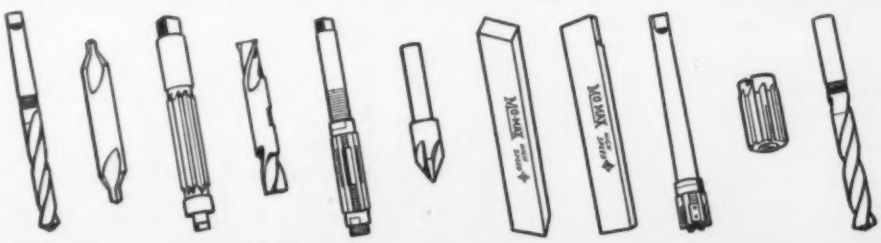
**THE CLEVELAND TWIST DRILL CO.**

**1242 East 49th Street • Cleveland 14, Ohio**

*Stockrooms:* New York 7 • Detroit 2 • Chicago 6 • Dallas 1 • San Francisco 5 • Los Angeles 58

*E. P. Barrus, Ltd., London W. 3, England*

ASK YOUR INDUSTRIAL SUPPLY DISTRIBUTOR FOR THESE AND OTHER *Cleveland* TOOLS



CLEVELAND

DISTRIBUTORS EVERYWHERE are ready to serve you!




LABORATORY-TESTED for consistent quality

SOL·SPEEDI·DRI

SLIPPERY FLOORS VANQUISH when you use Sol-Speedi-Dri. It's America's largest-selling oil and grease absorbent. For good reason. Pound for pound, price for price, you can't buy a better product. Production controls and selective mining see to that... and laboratory tests safeguard its consistent quality. Adequate warehouse stocks in cities throughout the country — speedy delivery everywhere. Standardize on Sol-Speedi-Dri!

SPEEDI-DRI CORP., 218 W. Washington Sq., Philadelphia 5, Pa.




Warehouse stocks maintained in principal cities of the United States and Canada.

• • •

Inquiries in New York, New England and New Jersey should write to Speedi-Dri Corp. Elsewhere in U.S., to Waverly Petroleum Products Co., 1724 Chestnut St., Philadelphia 3, Pa.

FREE SAMPLE: Fill out the coupon and mail today for big, free sample.

Name _____

Address _____

City _____ State _____

P 2-58


## NEW PACKAGING FOR LUBRICATION PARTS

New packaging designed to provide increased protection, better identification, and lower stock handling costs has been developed by the Lincoln Engineering Co., St. Louis, Mo. for its lubricating equipment. The metal-edge boxes give extra protection against crushing, and boxes stack neatly. New label design clearly identifies the part by use of line




**The new packaging affords better protection for parts.**

drawing as well as the name, part number, and quantity packed in the box. Contents of the package are individually heat-sealed inside a transparent polyethylene bag which protects against dirt and moisture and prevents corrosion. Inside the bag there is an identification card which carries name of part and model number.

* * *

## ELECTRONIC TORCH DEVELOPED BY GENERAL ELECTRIC

Hot enough to cut holes in firebrick and to melt tungsten, hardest to melt of all the elements, an "electronic torch" has been developed by scientists of the General Electric Company's Research Laboratory.

Dr. J. D. Cobine, G-E scientist, combined high-frequency radio signals and various gases to produce temperatures considerably higher than the melting point of tungsten, which is 3370 degrees Centigrade. He emphasized that the electronic torch is still in the laboratory stage, and that its commercial possibilities have yet to be explored.

Heart of the torch is an electron tube known as a "magnetron", which produces radio waves with the extremely high frequency of one billion cycles per second. Leading from the tube is an antenna made of two short metal cylinders, one within the other. A high-frequency arc can be made to form on the end of the antenna. If certain gases, among them nitrogen and carbon dioxide, are fed past the arc, the electronic torch results, resembling a jet of flame about nine inches long.

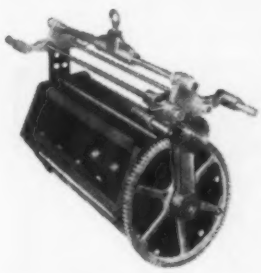
The high temperatures produced on

(*Please turn to page* 170)



# Guessing Doesn't Pay

## WHEN BUYING PLATING AND POLISHING EQUIPMENT & SUPPLIES



**You don't have to guess what qualities make one plating barrel better than another.** It must: withstand high acid and alkali solutions... endure continuous production... be unaffected by extreme temperature changes. If a plating barrel does these things, then you can load the cylinder and run it through the entire plating cycle. Result: no transfer of parts... high speed production... low handling costs. H-VW-M Mercil type plating barrels have all these qualities. Ask for Bulletin PB-107.



**Guessing is out when it comes to selecting polishing wheels.** Such factors as type and shape of work, and the finish desired must be considered. The wheel itself should be flexible, of uniform density and properly balanced. Be sure, too, that it is made of all new materials so necessary for maximum strength and wearing qualities as well as ability to hold the abrasive. All these factors are inherent in the full line of H-VW-M cloth, canvas, leather and felt polishing wheels. Ask for Bulletin W-102.

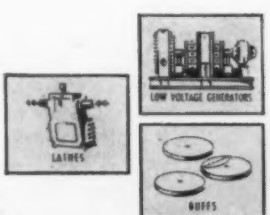


**Taking a chance on a cleaning solution may make plating a tougher job.** Only the right cleaner compounded to remove soil from a specific metal will give you the absolutely clean surfaces so essential to good plating. Important considerations, too, are pre-cleaning—cleaning and plating operations—metal surface conditions—type and quantity of packing, if any, in recesses—effect of stacking—base metal. H-VW-M is constantly studying these and other factors to provide you with the most complete line of cleaners, each designed to do a specific job, effectively and economically. Ask for Bulletin C-106.

Don't guess about plating and polishing equipment and supplies. Remember: you can always get what you want from H-VW-M when you want it... H-VW-M products are strategically warehoused for prompt service and delivery... H-VW-M sales-engineers and laboratory technicians are always available for help in your production problems. It is this overall service and experience that have made H-VW-M *the central source of supply... for over 70 years... for all the needs* of the electroplating and polishing industry.

**HANSON-VAN WINKLE-MUNNING COMPANY,**
**Matawan, N. J.** *Plants at:* Matawan, N. J. • Anderson, Indiana • *Sales Offices:* Anderson • Chicago • Cleveland Dayton • Detroit • Grand Rapids • Matawan • Milwaukee New Haven • New York • Philadelphia • Pittsburgh Rochester • Springfield (Mass.) • Stratford (Conn.) • Utica

SINCE 1820




**H-VW-M**

6325

*Manufacturers of a complete line of electroplating and polishing equipment and supplies*

NEW TAPE GETS GREATER STRENGTH, FLEXIBILITY—FROM GLASS...



TOUGH "BUNDLING" OF PREFABRICATED STEEL PARTS MADE EASY WITH EXTRA STRONG PERMACEL-15 FIBERGLAS THREAD REINFORCED TAPE. HOLDS FAST, SAVES TIME— REPLACES WIRE, STEEL STRAPPING!

HEAVY INSULATED CABLE ROLLS ARE BOUND QUICKLY, SAFELY, SECURELY. PERMACEL-15 STICKS INSTANTLY— WILL NOT HARM INSULATION.



UNIQUE CONSTRUCTION OF PERMACEL-15: SURPRISINGLY STRONG, FINE SPUN GLASS THREADS ARE SEALED TO TOUGH KRAFT BACKING WITH ADHESIVE COATING. SAFE, FLEXIBLE—SUPPORTS 175 LBS. PER INCH WIDTH.




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INDUSTRIAL TAPES

INDUSTRIAL TAPE CORPORATION • NEW BRUNSWICK, N. J.


(*Continued from page* 168)

any surface placed in the jet are caused almost entirely by the heat generated as atoms join together to form molecules, Dr. Cobine said. The molecules of the gases are broken up into atoms by the high-frequency arc. These atoms join together again on surfaces placed in the torch. The jet itself is not necessarily hot.

The arc can break up nitrogen molecules, ordinarily composed of two nitrogen atoms, into their separate atoms. When these two atoms strike a surface, they reunite and give off heat, he said. Argon, helium, and other gases that exist normally as single atoms, give a flame essentially devoid of heat, since they cannot be broken and rejoined. An electronic torch composed of one of these gases gives off light, due to motion of the electrons caused by the radio waves, but the hand may be inserted in it without ill effects.

## USE SHIPPING BOX AS DISPLAY UNIT




A corrugated shipping box that doubles as an attractive and economical merchandising-display unit with a minimum of "set-up" difficulty on the part of the dealer is one of the newest developments to come from the Package Laboratory of The Hinde & Dauch Paper Company, Sandusky, Ohio.

The large, master shipping box contains four display boxes, each packed with 30 light bulbs of assorted wattage. When the dealer opens the shipping box, he removes a large, lithographed broadside which is packed at the top, and pastes it on the front of the box. Thus the shipping box becomes a counter-high pedestal, on which one of the smaller display boxes is placed to complete the unit.

The display boxes have die-cut "pop-up" lids which fold back to expose a printed advertising message which harmonizes in type, layout and color with the broadside affixed to the front of the shipping box. Outer surfaces of the display boxes are printed in solid colors designed to draw attention to the display. The sizes of the bulbs are printed on the front of the display box; space for pencilling-in sale price is also provided. Bulbs are protected in the display boxes with corrugated wrappers.

(*Please turn to page* 172)

*Here's what you get with*

# CHASE PHOSPHOR BRONZES

**HIGH STRENGTH**



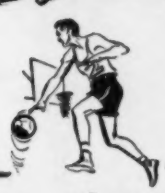
**HIGH FATIGUE-RESISTANCE**



**GOOD DUCTILITY**



**GREAT RESILIENCY**



**EXCELLENT CORROSION RESISTANCE**



Here is a quick summary of some of the ways you can use Chase Phosphor Bronzes. It's a list well worth studying . . . for you may find these hard-working alloys can take on one of your own tough production assignments.

***Chase Phosphor Bronze 5% (Grade A)*** is the most versatile. You'll use it for sleeve and thrust bearings, bellows, clamps, cotter pins, diaphragms, fasteners (snap and slide), lock washers, stranded cable, wire cloth . . . and that's only a fraction of the list of uses. Rod, Strip and Wire.

***Chase Leaded Phosphor Bronze (Grade B)*** is what you'll specify for screw machine products, gears, spindles, valve parts, and the like. Rod only.

Heavy duty alloys are ***Chase Phosphor Bronze 8% (Grade C)*** and ***10% (Grade D).*** In Rod, Strip and Wire for use in heavy duty bearings, bridge bearing plates, diaphragms and springs (severe service).

***444 Bronze*** is a free-cutting alloy for screw machine use, also for bearings, bushings, gears, shafts, thrust washers and valve parts. Rod or Strip.

**CHASE BRASS & COPPER CO.**
**Dept. PURC 350, Waterbury 20, Connecticut**

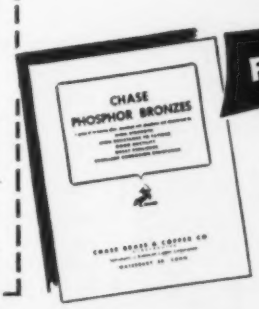
*Please send me folder on Chase Phosphor Bronzes.*

NAME_____ POSITION_____

COMPANY_____

STREET_____

CITY_____ STATE_____




**FREE FOLDER**

Mail the coupon for folder giving tables of properties (hardness, tensile, fabrication, physical) and of uses and forms.

# Chase

*the Nation's Headquarters for*
**BRASS & COPPER**

WATERBURY 20 CONNECTICUT — SUBSIDIARY OF KENNECOTT COPPER CORPORATION

THIS IS THE CHASE NETWORK . . . *handiest way to buy brass*

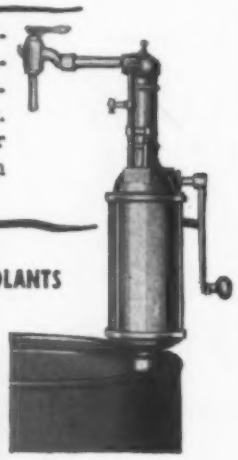
ALBANY† ATLANTA BALTIMORE BOSTON CHICAGO CINCINNATI CLEVELAND DALLAS DETROIT INDIANAPOLIS KANSAS CITY, MO. LOS ANGELES MILWAUKEE MINNEAPOLIS NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH PROVIDENCE ROCHESTER† ST. LOUIS SAN FRANCISCO SEATTLE WATERBURY (†Sales Office Only)



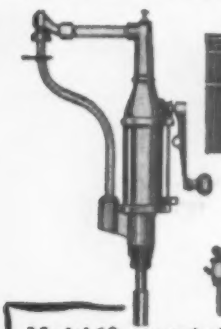
"Yes Sir, Meet My Friends of 30 Years!"

*"I've been buying dependable Phillips single stroke hand operated Barrel Pumps for 30 years . . . they sure save time and prevent waste."*

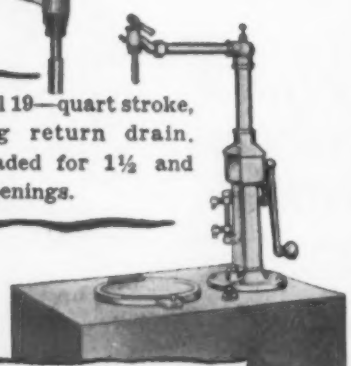
Model 174—gallon stroke, quantity stops, adjustable suction. Threaded for 1½ and 2" drum openings.



FOR LUBRICANTS & COOLANTS



Model 19—quart stroke, swing return drain. Threaded for 1½ and 2" openings.



FOR KEROSENE, GASOLINE, Light Liquids
Model 81—gallon stroke pump, 65 gallon tank 20 x 27 x 30" high, 16 gauge steel—ideal for battery installation. Can be supplied with casters or dolly to move where needed. Other sizes available.

*Can be plated to handle corrosive liquids.*

WRITE FOR PRICES AND FREE CATALOG TODAY!

PHILLIPS PUMP & TANK CO.
5030 Brotherton Rd.
Cincinnati 9, Ohio


## MALEIC ANHYDRIDE NOW AVAILABLE IN BRIQUETTE FORM

Commercial production of maleic anhydride in briquette form was recently announced by the Monsanto Chemical Co., St. Louis, Mo. The uniformity of the briquettes and the absence of dust and fines, which are screened out, make them particularly attractive to plant men, it is said. Moisture pick-up and subsequent hydrolysis are held to a minimum because of the small exposed surface per unit weight. The briquettes are offered in addition to the flake and fused forms to make maleic anhydride available in the form best suited to the needs of each consumer.

## WIRE RESISTER TYPE OF ELECTRICALLY HEATED RUBBER

A new information bulletin on embedded wire resister type of electrically heated rubber has been published by The B. F. Goodrich Company, Akron, Ohio. It contains the following information:

Q. What is electrically heated rubber? A. It is a thin, flexible surface or space heater. It is made up of a resistance wire heating ply sandwiched between plies of specially compounded synthetic rubber. It can be made in any size or shape for any use. It is economical and convenient to install and use.

Q. What voltage does it operate on? A. Any voltage either AC or DC.

Q How much power can be put into heated rubber? A. Any amount, the only limit being that, if conditions of use are such that temperatures above 300° F. will result, special, less-rubber-like materials are used.

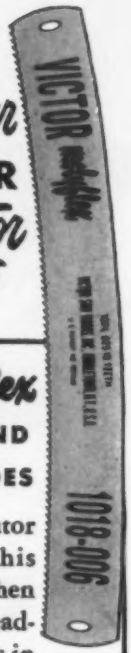
Q What sizes and shapes does it come in? A. Any size and any shape. There are no "standard" configurations. Each application is designed to fit the intended use most efficiently and at lowest initial and lowest operating cost.

Q. Why is rubber used in these heaters? A. For a great many reasons. Some of these are: 1. Tough, high-wear resistant surfaces. 2. Flexible for installing over irregular contours and yet can be fabricated in convenient flat or cylindrical shapes and then made to conform to odd shapes in use. Also, of course, the rubber can be formed exactly to any shape during fabrication. 3. It can be molded, extruded, calendered, handplied and faired smoothly. 4. Its surfaces can be made glossy-smooth or embossed to any pattern desired. 5. During fabrication of the heaters the unvulcanized rubber can be tackified to form a good working base for holding the wiring circuits as they are built-up. This makes for low manufacturing costs and high quality heaters. 6. Rubber is one of the best electrical insulators and also one of the best heat insulators. Its thicknesses are arranged in each heated rubber design for maximum heating efficiency. 7. It affords complete moisture sealing. 8. It gives a non-brittle heater that cannot be broken and has each of

(*Please turn to page* 176)



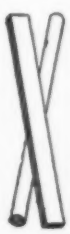

Ask your VICTOR distributor about




THE NEW molyflex HIGH SPEED HAND HACK SAW BLADES

Your Victor distributor will tell you that this new "Molyflex"... when pitted against eight leading competitive blades in cutting treated SAE 52100 ball bearing steel . . . *averaged 23.8% more metal cut* than all the leading brands tested. He will tell you that this new "Molyflex" . . . an addition to the Victor line . . . has greater uniformity, is absolutely shatterproof and unbreakable when used in a frame.

VICTOR STEELRITE METAL MARKING CRAYONS



Ask your Victor distributor about the new Victor Steelrite Metal Marking Crayons. Available in a variety of sizes, these crayons are made of genuine soapstone. Special extrusion process insures uniform strength and composition. Markings can be made on hot, cold, damp or grimy metal and withstand pickling, yet do not affect enamel application.

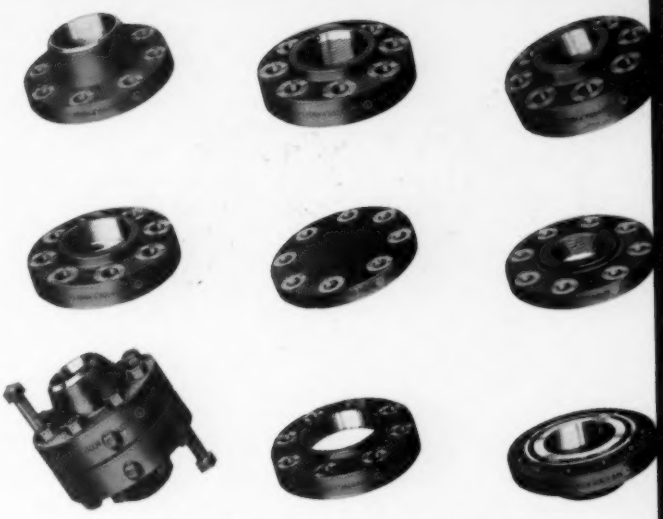
*Don't forget to ask for a free copy of the Victor Metal Cutting Booklet for your pocket or tool kit and the Victor Wall Chart for your shop. They'll help you get the maximum efficiency from your metal cutting saw blades.*




VICTOR
SAW WORKS, INC., Middletown, N. Y., U. S. A.
Makers of Hand and Power Hack Saw Blades
Frames and Band Saw Blades



**SEAMLESS WELDING FITTINGS**
½-inch through 36 inches
Standard through Double Extra Strong



**FORGED STEEL FLANGES**
½-inch through 30 inches
150 lbs. through 2500 lbs. pressure

**FORGED STEEL FITTINGS**
Screwed and Socket Welding
⅛-inch through 4 inches
2000 lbs. through 6000 lbs. pressure



L
TO MARK PROGRESS

**LONG WELDING NECKS**
1-inch through 24 inches

**LARGE O.D. FLANGES**
26 inches through 96 inches



# Ladish...one place to get them all

*Available in*
**CARBON**
**ALLOY**
**STAINLESS STEELS**
**ALUMINUM**
**COPPER**
**and OTHER**
**NON-FERROUS**
**METALS**

**Whatever the piping job... Ladish is prepared to supply your fittings needs. Here is the one line that offers them all... Seamless Welding Fittings, Forged Steel Flanges, Forged Steel Fittings, Large O. D. Flanges and Long Welding Necks... in an unrestricted selection of types, sizes, weights, pressure ratings and materials. Standardizing on this complete line not only simplifies procurement but also assures you of added dependability by protecting every joint of the system through use of Ladish Controlled Quality Fittings.**

A COMPLETE LINE PRODUCED UNDER ONE ROOF
... ONE RESPONSIBILITY



**LADISH CO.**
CUDAHY, WISCONSIN
MILWAUKEE SUBURB

*DISTRICT OFFICES:* New York • Buffalo • Pittsburgh • Philadelphia • Cleveland
Chicago • St. Paul • St. Louis • Atlanta • Houston • Los Angeles




# Comfortable Protection

## ...with Exceptional Resistance to Heat

AO recommends the 5X163 glove illustrated for protection on gas welding and the heaviest amperage electric welding. Hands and fingers have the freedom and comfort they need for the job because the chrome-tanned leather, while made to withstand hard wear, is soft and flexible. Your nearest AO Safety Products Representative can supply you.

**QUICK FACTS**
**(AO 5X163 Glove)**

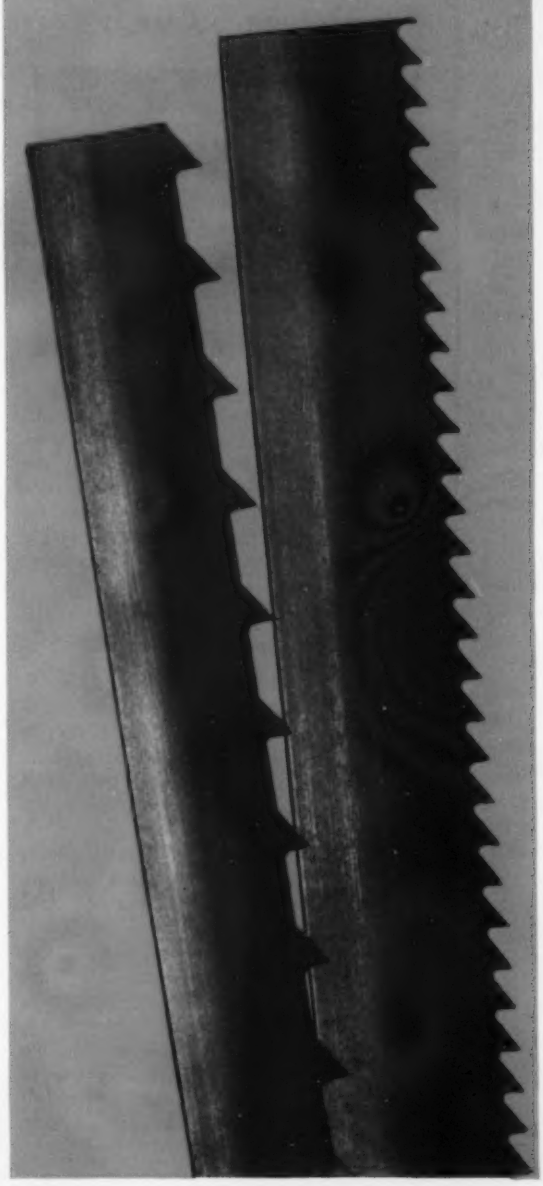
- Chrome tanned split horsehide
- One piece back and palm
- All vulnerable seams welted for extra protection
- Extra heavy lining on back of hand

American Optical
COMPANY
SAFETY PRODUCTS DIVISION

*Southbridge, Massachusetts • Branches in Principal Cities*

# DISSTON®
# METAL CUTTING BAND SAWS





## ...COST CUTTERS!

Full speed production • Precision work • Added tool life • Lower costs . . . with Disston Metal Cutting Band Saws. Hard Edge Flexible Back; also made Hardened Throughout. Regular and Buttress Tooth patterns. Tooth spacings, settings, widths, gauges, to fit your requirements.

Uniform hardness and temper—toughness—cutting edges that last longer—are assured by Disston Steel, made with Disston Skill.




**DISSTON SAFETY REEL**—Conveniently holds 100 ft. band saw coils reeled for safety. Widths from ⅛″ to ½″. Packed in cartons.



Disston Service—including analysis of your tool applications by qualified Disstoneers—can add to your savings of time, tools and material . . . drive your costs to new lows!



**DISSTON BITE-RITE* FILES**

Faster cutting • smoother working • longer lasting. All Double Cut files have the distinctive wavy tooth pattern which means less tracking. A complete line of American Patterns. Also Superfine* Swiss Pattern for your most exacting work. Cuts, shapes and sizes correct for your work.



**DISSTON HACK SAW BLADES**

Tougher. Longer lasting edges. For a wide variety of machine and hand metal cutting operations. Four types—all money savers: HIGH SPEED • DI-MOL • CHROMOL* • DURAFLEX*.

**DISSTON HACK SAW FRAMES**

Four sturdy, practical styles, quickly adjustable to four cutting positions for 10- or 12-inch blades.

*Reg. U.S. Pat. Off.

*Buy through your Disston Industrial Distributor*

**HENRY DISSTON & SONS, INC.**

**333 Tacony, Philadelphia 35, Pa., U.S.A.**

*In Canada, write:* **2-20 Fraser Ave., Toronto 3, Ont.**

ESTABLISHED 1840 REG. U.S. PAT. OFF.

# BUSINESS IN MOTION

## *To our Colleagues in American Business . . .*

• Safety is something that concerns us all, whether on the road, in the factory, farm, office, home. Hence Revere takes a considerable amount of satisfaction in a new safe brake drum for heavy trucks, entirely aside from the fact that it contains a sizable amount of copper. This new drum is made of alternate rings or segments of steel and copper, bolted or bonded together. The copper segments project on the outside of the drum, forming fins. There is nothing new about fins on brake drums, but making them of copper is new, so far as we are aware. This use of copper is based on the fact that it is an excellent conductor of heat, far superior to steel in that respect. So good is this manner of dissipating heat that it has been said that new reliability has been brought to the braking of heavy vehicles.




On long hard runs, particularly in hilly and mountainous country, braking sometimes is a problem. As the truck driver puts it, "the brakes fade." This is not due to any trouble with the air or hydraulic systems, but to heat. Brakes that have to hold back 10 tons or more on a down grade get very hot indeed, far over the temperature of boiling water. The steel drums expand when heated to such an extent, so that the brake shoes, which were properly adjusted under cool conditions, are now out of adjustment within the heated drums. The brakes "fade", due to the conversion of kinetic energy into heat. Any way of keeping the brakes cool by removing that heat would be a great contribution to safety and truck operating economy, reasoned the inventor of the new drums. He sought Revere's collaboration, made several sets of drums with built-in copper rings, and had them tried out on routes passing through the Alleghanies, with their steep and winding roads. Truck drivers came back with reports of the best brakes they had ever handled. One swore he would never drive a truck with any other brake drums. Continued experience showed that not only was fading eliminated, but the drums and linings wore much longer, with 100,000 miles the expected minimum. One Western Pennsylvania truck operator reported 110,000 miles, and on the basis of wear, expects the lining to go 150,000 miles, the drums 250,000.

It is surprising how many favorable side effects have been experienced. Drivers say they can go down steep hills in high instead of low, thus lessening wear on differential, transmission and engine. Running schedules are faster. Equipment spends less time in the shop, more time in revenue-producing mileage. All this and more simply by taking advantage of the heat-conductivity of copper in combination with the strength of steel. This copper-cooled drum is one of those "obvious" ideas which make people remark: "Now why didn't I think of that!"

Ideas help keep our country ticking, but nobody seems to know just how to turn them out on a production-line basis. But this much is known about the generation of ideas: contacts with people and problems will help a lot. Right now you may have a problem which one of your suppliers could help you solve. He might find a new use for an old material, or a new material for a new use, or perhaps put two old materials together, as in this brake drum which "gives the driver the brakes." It might pay you to discuss your troubles fully with your suppliers. They will be delighted to collaborate with you.

**REVERE COPPER AND BRASS INCORPORATED**

***Founded by Paul Revere in 1801***

☆ ☆ ☆

***Executive Offices:***

**230 Park Avenue, New York 17, N. Y.**

(*Continued from page* 172)

the wires in it mounted flexibly to take all kinds of handling during installation and in use. 9. It has excellent weathering and aging properties. There is nothing exposed to rust or corrode. The general physical properties are excellent over a wide range of conditions of temperature, moisture, oil, etc. 10. No fasteners, brackets or drilling of holes is required to install rubber heaters. They are simply bonded firmly to any surface using easy-to-handle air-setting adhesives.

Q. How much does it cost? A. Prices vary because of variance in sizes and shapes of heaters involved, and quantities required.

Q. What are present commercial uses? A. Surface heating, space heating, moisture control, heating fluids in pipes, preventing fluid valves from freezing, presseed-wood fabrication heaters, and an unlimited variety of other uses. In short, heated rubber is the answer wherever efficient, low-cost heating is needed, regardless of the complexity of the application.

1 1 1

### DIE-STAMPED NAMEPLATES




A die-stamped name plate service is announced by the Federal Tool & Manufacturing Co., 3620 Alabama Ave., Minneapolis, Minn. Name plates may be chrome or nickel plated. Facilities are available for making plates in sizes up to 9" x 12", and of any metal up to 3/32" thick, providing it can be stamped.

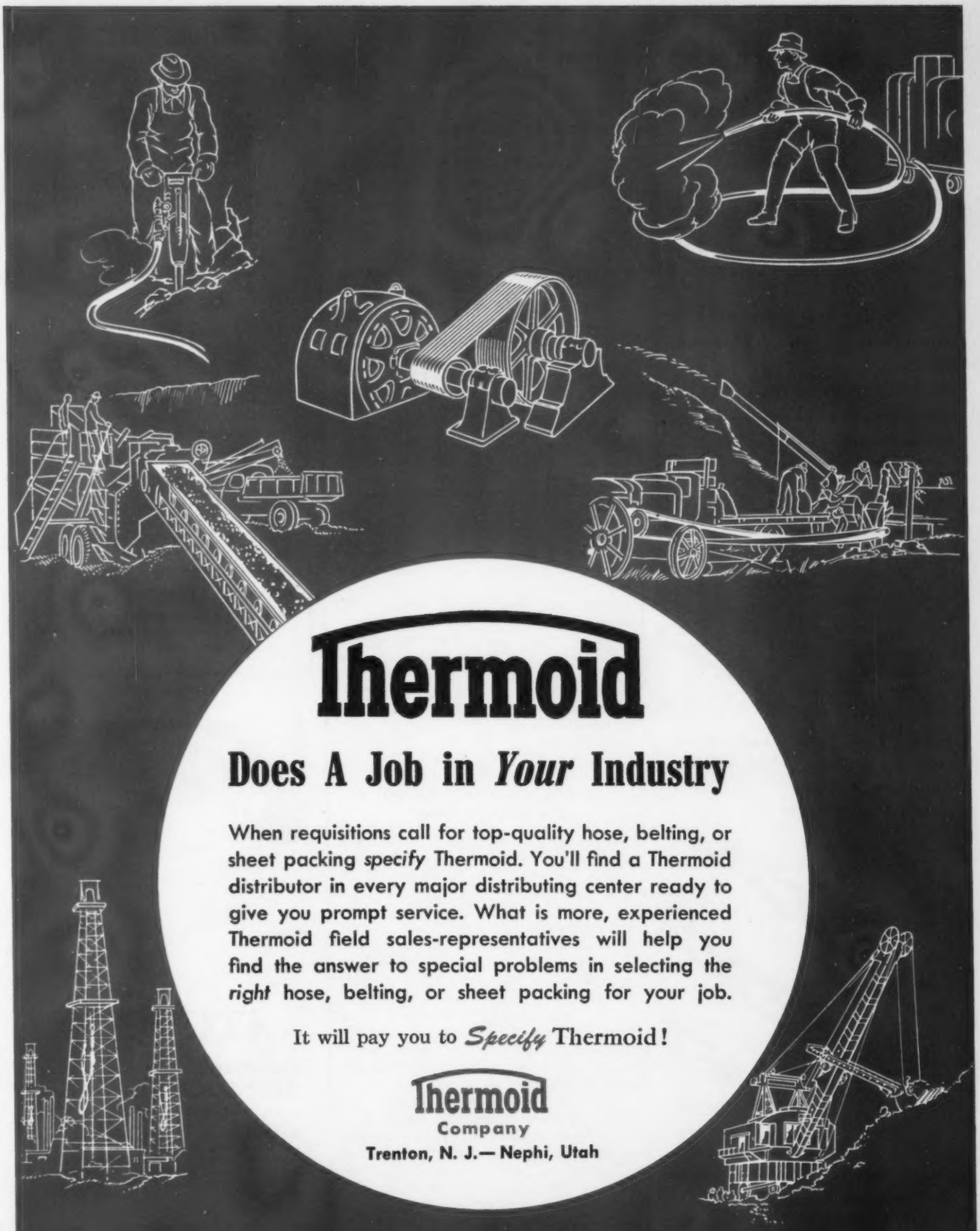
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### FREE MACHINABILITY FEATURES SPECIAL BRONZE ALLOY

Special bronze alloy, known as Mixture 44, developed by The Riverside Metal Co., Riverside, N. J. is said to simplify machining problems of screw machined and similar bronze or phosphor bronze parts.

High in lead content, but made without zinc, the new mixture has a machinability of 90% compared to the best free cutting brass rating of 100% or Grade B1 phosphor bronze rating of 50%. Because of its high lead content, Mixture 44 can be machined to closer tolerances and higher cutting speeds without burning or scoring the cutters. It contains no zinc, and hence is valuable for use in applications where zinc cannot be tolerated. Mixture 44 is available in rods, sheets, strips and bars.

(*Please turn to page* 178)



# Thermoid

## Does A Job in *Your* Industry

When requisitions call for top-quality hose, belting, or sheet packing *specify* Thermoid. You'll find a Thermoid distributor in every major distributing center ready to give you prompt service. What is more, experienced Thermoid field sales-representatives will help you find the answer to special problems in selecting the *right* hose, belting, or sheet packing for your job.

It will pay you to *Specify* Thermoid!

Thermoid
Company
Trenton, N. J.— Nephi, Utah

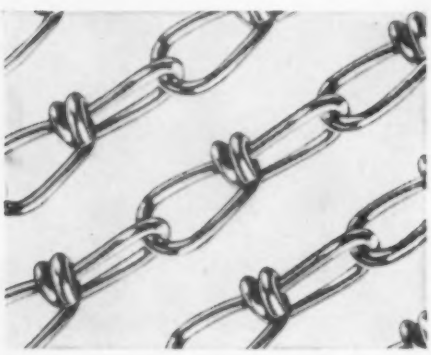
*Thermoid Quality Products:* Wrapped and Molded Hose • Conveyor Belting • F.H.P. and Multiple V-Belts • Transmission Belting • Elevator Belting • Molded Products • Industrial Brake Linings and Friction Materials

# HODELL

IS THE NAME FOR DEPENDABLE

# CHAIN

The quality line of Hodell Chain includes types and sizes for every industrial use. Hodell also makes many formed wire specialties and can make your chain assemblies to your specifications.



***Bulldog Coil*** . . . the chain for all-around use. Strong, light, flexible. Available in bulk, on reels or in cartons. Sizes No. 7 to 10/0.



***Sash Chain*** . . . formed and woven from high-tensile steel or bronze. Double thickness at the eye for extra strength. Bulk or reels. Sizes 8W to 45W. Stamped link, also.

***Send for Industrial Catalog*— giving full information on the complete Hodell line.**

**HODELL CHAIN COMPANY**
CLEVELAND 3, OHIO
ESTABLISHED 1886 — A division of THE NATIONAL SCREW & MFG. COMPANY


## HOSE UNITS WITH THREE FT. I.D. WEIGH FOUR TONS EACH

Construction of rubber hose units, weighing more than four tons each and measuring more than three feet inside diameter, is underway in the mechanical goods plant of The Goodyear Tire & Rubber Co., Akron, Ohio. Production of the 38" I.D. hose, in 20' lengths is the result of a six-year testing program on this type of hose conducted by the Corps of Engineers, U. S. Army. The hose consists of 15 plies of rubberized fabric and a coil of



The finished hose resembles a huge steel pipe

7/8" copperized steel wire for reinforcement over a one-inch tube of high-grade natural rubber. Each unit weighs 8,080 pounds. Breakdown of this weight is 690 pounds of cotton, 2813 pounds of compounded rubber, 2,287 pounds of copperized steel wire, 2,200 pounds of steel in hose nipples, and 90 pounds of steel clamps. The hoses will be installed on "dust pan" type dredges working in the Mississippi River.

## SURFACE NEED NOT BE SHINY TO REFLECT LIGHT

It has long been recognized that mere quantity of light is not enough for good seeing, according to President T. D. Wakefield of the F. W. Wakefield Brass Co., Vermilion, Ohio, lighting equipment manufacturers.

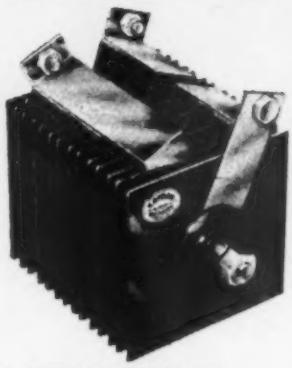
"If quantity alone were the answer it would be easy to hang up enough bare light bulbs of fluorescent tubes to give the amount of light desired. Yet the result would be painful in direct glare from the lights and because of equally destructive glare reflected from white glossy paper, shiny desk tops, or bright machine surfaces, as an example.

"In the ideal seeing environment no one is conscious of the light source. This condition is attained by proper shielding of lighting equipment and by elimination of the glare spots whch result from working surfaces that are too shiny.

"A surface need not be shiny to reflect light. The color or shade of the surface is what absorbs lights, makes 'dark' spots which cause the pupil of the eye to flutter when it passes over a dark surface, resulting in eye strain. Light colored surfaces on desks or machines, when done in dull finish, reflect the light without glare."

(*Please turn to page* 183)


## SELINIUM RECTIFIERS

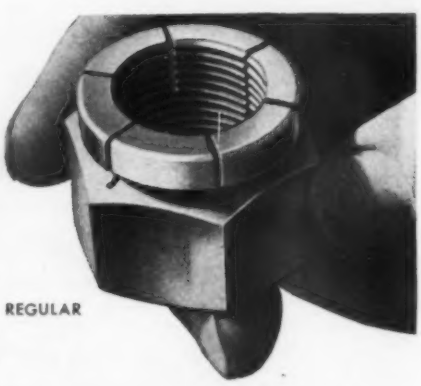


**1/3 LESS SPACE — 1/3 LOWER COST**

These selenium rectifiers whether for ½ Ampere, or for thousands of Amperes, are custom built and tailored to the application, giving maximum efficiency with minimum cost.

Our rectifiers are manufactured by selenium rectifier specialists. Their specialized engineering knowledge and consulting services is available without obligation. Write for descriptive sheets and quotations on these rectifiers and other electronic tubes and equipment.

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162 GREENWICH STREET
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NEW YORK 6, N. Y.



REGULAR

**FLEXLOC**

**ONE-PIECE SELF-LOCKING NUTS . . . . WON'T SHAKE LOOSE!**

Every day more FLEXLOC Self-Locking Nuts are being used to reduce maintenance costs. Here are lock nuts that the most chattering vibration won't budge, yet can be removed easily when desired. Furthermore, the one-piece FLEXLOC has no extra parts to lose or forget.

Why not try FLEXLOC Self-Locking Nut? Find out how they eliminate "tinkering" and save valuable maintenance time. Both *regular* and *thin* types.

Send for samples and literature.

See us at Space 128, A.S.T.E. Exposition April 10-14, Convention Hall, Phila.

**STANDARD PRESSED STEEL CO.**
JENKINTOWN 31, PENNSYLVANIA

**Walker-Turner designing makes these**

# 2 NEW PRODUCTION MACHINES

## *Low in Initial Cost . . . High in Operating Efficiency*

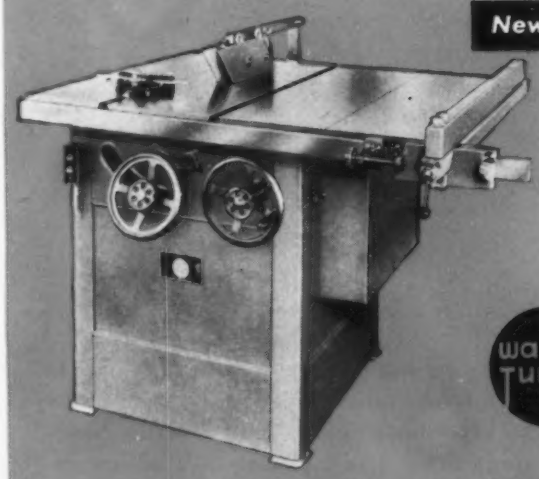


INDUSTRY will find what it's looking for in these new Walker-Turner machines—they're built with industry's needs in mind. Increased man-hour productivity . . . greater safety for the operator . . . low initial cost . . . a minimum of maintenance—these were the objectives, the goals that guide Walker-Turner engineers in designing *any* production machine.

Below are just a few of the advanced features of Walker-Turner's completely new 12" Tilting Arbor Saw and 16" Band Saw. Get the whole cost-cutting story from your dealer. Compare these machines—in engineering, performance, *cost*—with others. See why it pays to turn to Walker-Turner for metal and woodworking machines—*today more than ever!*

### New 16" BAND SAW

Now, for the first time in a band saw, all the basic parts of the machine are functional. Designed for steady production work, this new Walker-Turner 16" Band Saw frequently will pay for itself on the first job. Single speed models for wood and plastic cutting. 8 blade speeds—with standard motor 193-5692 feet per minute: with slow speed motor 126-3700 feet per minute. Table size 18" x 17".



### New 12" TILTING ARBOR SAW

Capacity 4½". Table 48" wide x 38¾" deep. 5 h.p. 3 phase motor or 3 h.p. single phase. Dado capacity 1½" wide. Saw speed 3600 r.p.m. New rip fence locks front and rear, micrometer adjustment "T" slots for miter gauge. New improved safety guard and splitter. Exclusive "Synchro Belt Drive".

walker-turner

**SOLD ONLY THROUGH AUTHORIZED DEALERS**

SEE YOUR LOCAL DEALER—or mail coupon below for Catalog describing in detail these and the many other machines in the complete Walker-Turner line.

KEARNEY & TRECKER
MILWAUKEE

**WALKER-TURNER DIVISION**
PLAINFIELD, NEW JERSEY

**Walker-Turner Division, Kearney & Trecker Corp.**
**Dept. P2, Plainfield, N. J., U. S. A.**
Please send me copy of the new Walker-Turner Machine Catalog.

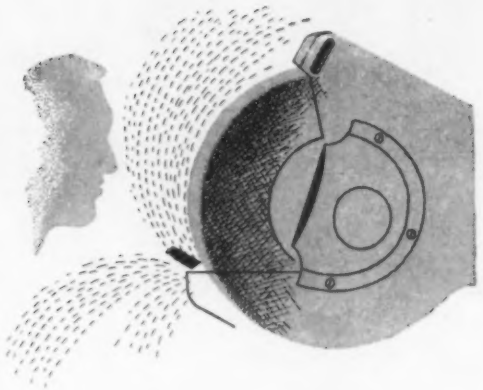
Name .....

Position ..... Company .....

City ..... Zone ..... State .....

WALKER-TURNER DIVISION, KEARNEY & TRECKER CORPORATION, PLAINFIELD, NEW JERSEY

# they're strong for standardization



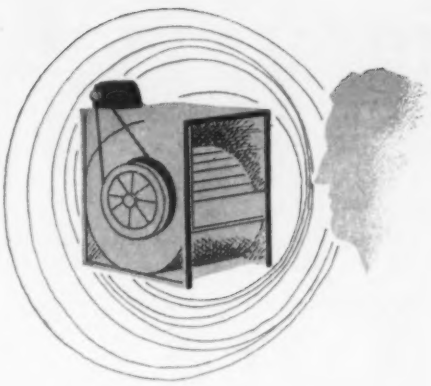
**Electrical Engineer, machine tool company, says:** "I think designers will save time in the long run if they decide, at the start of a job, to use standard motors. We'll eliminate exhaustive engineering tests we used to make on fractionals. With horsepower, service factor, breakdown torque, and starting current all rated on a clear-cut, uniform basis we'll know *in advance* that the motor will do the job."



**Chief engineer, portable tool plant, says:** "I simplify design when I specify series-motor parts with NEMA standard dimensions for our portable tools. By designing tool housings to take parts conforming to these standards, I simplify case construction, obtain interchangeable motor design, and lower overall costs."



**Vice-President, washing machine company, says:** "The use of *standard* washing machine motors helps our dealers to give dependable service. With standard motors, the service man can take full advantage of the motor manufacturer's motor-exchange and repair-service plans—take the headaches, and delays, out of motor repairs or replacement. He can be sure that the motor he puts back on the job will perform as it should."



**President, electric blower corporation, says:** "The big thing about the new fractional-hp motor standardization plan, to me is that we stand a better chance of getting 'off-the-shelf' delivery of motors when they are a big-production item, instead of a special. Also, we eliminate special jigs and fixtures, and the need for making universal mounting bases and adapter plates."



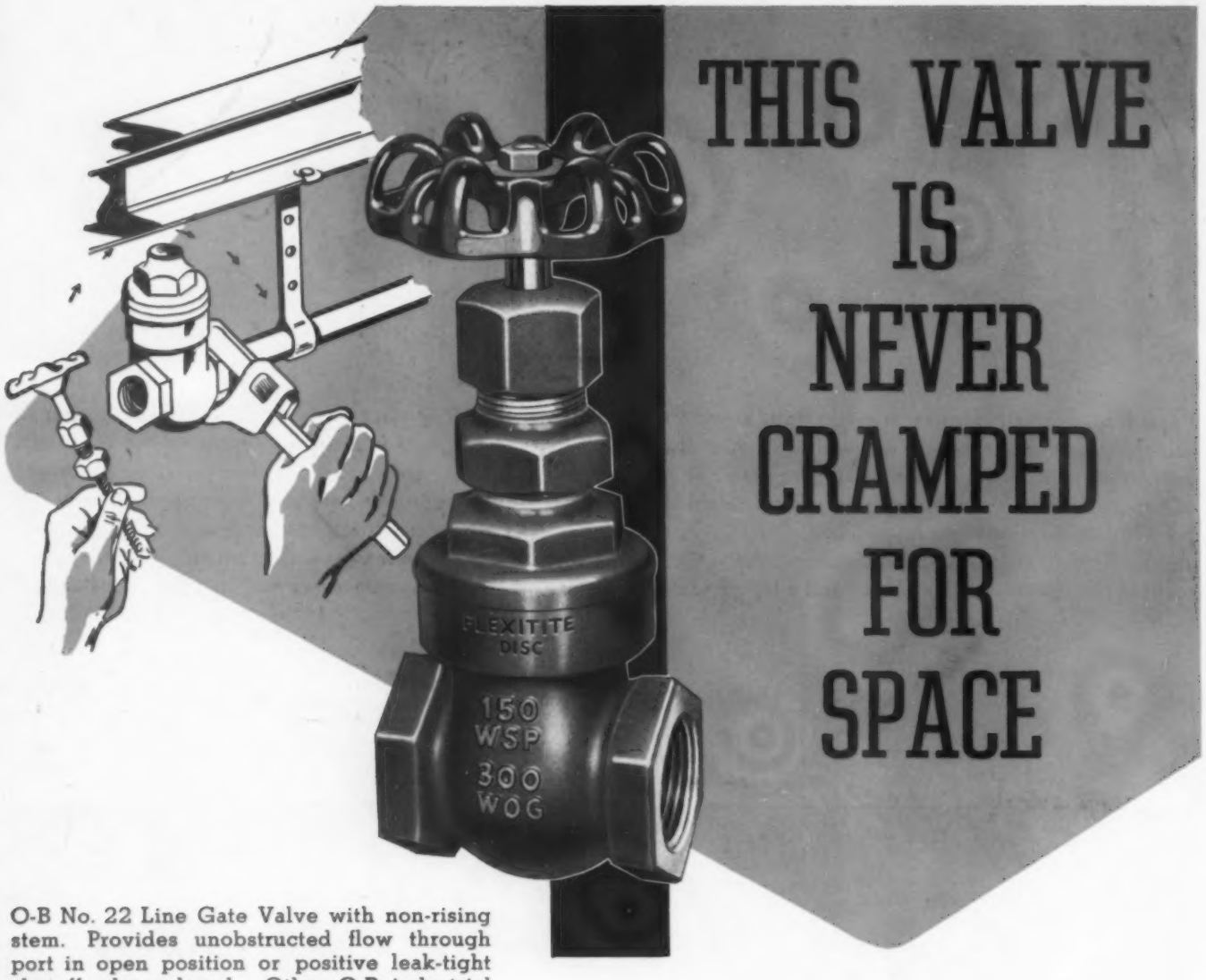
**Head of oil burner firm says:** "Standardization of motors and parts is most important to our company. Our burners can be made in several sizes and types without changing the motor size or application, even when making improvements and new models. Standardization means lower production and inventory costs for oil burner manufacturer and distributor or dealer."


They use General Electric Standardized FRACTIONAL HORSEPOWER Motors

**WANT TO SEE** whether a switch to standardized General Electric fractional-hp motors will pay off for you? Our engineers will be glad to give you the unvarnished facts. Just drop us a line giving the size, type and special characteristics of the motors you are now using. For general information about fractional-hp motor standards write for Bulletin GES-3565. Apparatus Department, General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC

700-99




# THIS VALVE IS NEVER CRAMPED FOR SPACE

O-B No. 22 Line Gate Valve with non-rising stem. Provides unobstructed flow through port in open position or positive leak-tight shutoff when closed. Other O-B industrial gate valves are available for various pressures in rising or non-rising stem types, with soldered or threaded pipe ends.

Where working space is restricted, you will greatly appreciate the convenient take-down feature of O-B gate valves. These sturdy valves unscrew at the stuffing box, allowing stem, stuffing box, and packing nut to come out in one piece.

With these parts removed, the valve body with disc inside and center piece can be easily threaded to the pipe ends--even in cramped quarters where only a minimum of free-throw space is available. The result is an appreciable saving in make-up time and lower valve installation costs for you.

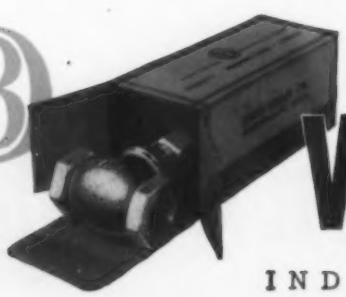
A special feature of all O-B gate valves is the Flexitite Disc.* The slight flexibility of this disc permits it to adjust to minor irregularities of the seat and assures a leak-tight closure.

Contact your local Ohio Brass distributor for any of your industrial valve needs.

**OHIO BRASS COMPANY, MANSFIELD 5, OHIO**

* Reg. U. S. Pat. Office.

4016-V

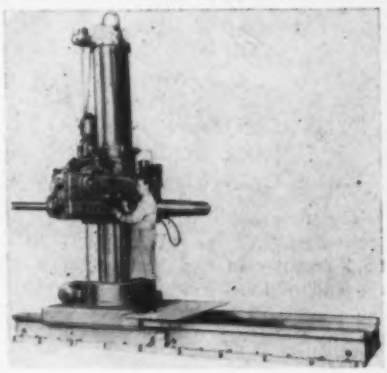


**Ohio Brass VALVES**

FOR DOMESTIC AND INDUSTRIAL USE

## HEAVY DUTY HORIZONTAL DRILLING AND TAPPING MACHINE

New heavy duty horizontal drilling and tapping machine, Model 1040, is announced by Kaukauna Machine Corp., Kaukauna, Wis., for boring, drilling, tapping, reaming and spotfacing operations. A spread of 10 hp to 20 hp provides ample power for handling a wide range of sizes on production or job shop work. The head swivels 45° up and down from the horizontal position and the column swivels 360° to increase flexibility and versatility and to eliminate the



need for pit construction, trunions and special holding fixtures. It can be used as a stationary fixed-location machine or as a portable unit with spreader arms, leveling jacks and lifting ball. All swiveling units are graduated in degrees and half-degrees to permit accurate angular settings for any machining problem. Swiveling of any unit may be eliminated for applications where only straight horizontal machining operations are required.

1 1 1

## BOOKLET ON ANTI-FRICTION BEARINGS

The Anti-Friction Bearing Distributors' Association announces publication of a 20-page booklet titled "Installation, Maintenance, Removal of Anti-Friction Bearings". This booklet is probably the most comprehensive on the subject of bearing care to date. It has been compiled and printed by the Association as a service to plant supervisors, maintenance men and others responsible for maintenance of equipment containing anti-friction bearings.

Since many bearing failures are due to mishandling and improper maintenance practices, this booklet is a handy guide to correct shop procedure that can increase bearing efficiency and eliminate many bearing failures. It is profusely illustrated throughout, gives detailed information on the subjects of Bearing Types, Cleaning Bearings, Removing Bearings, Installation, Lubrication, and tips on how to handle and prepare bearings for storage.

Copies of "Installation, Maintenance, Removal of Anti-Friction Bearings" may be obtained free of charge by writing The Anti-Friction Bearing Distributors' Association, 1900 Euclid Building, Cleveland 15, Ohio.

(*Please turn to page* 184)

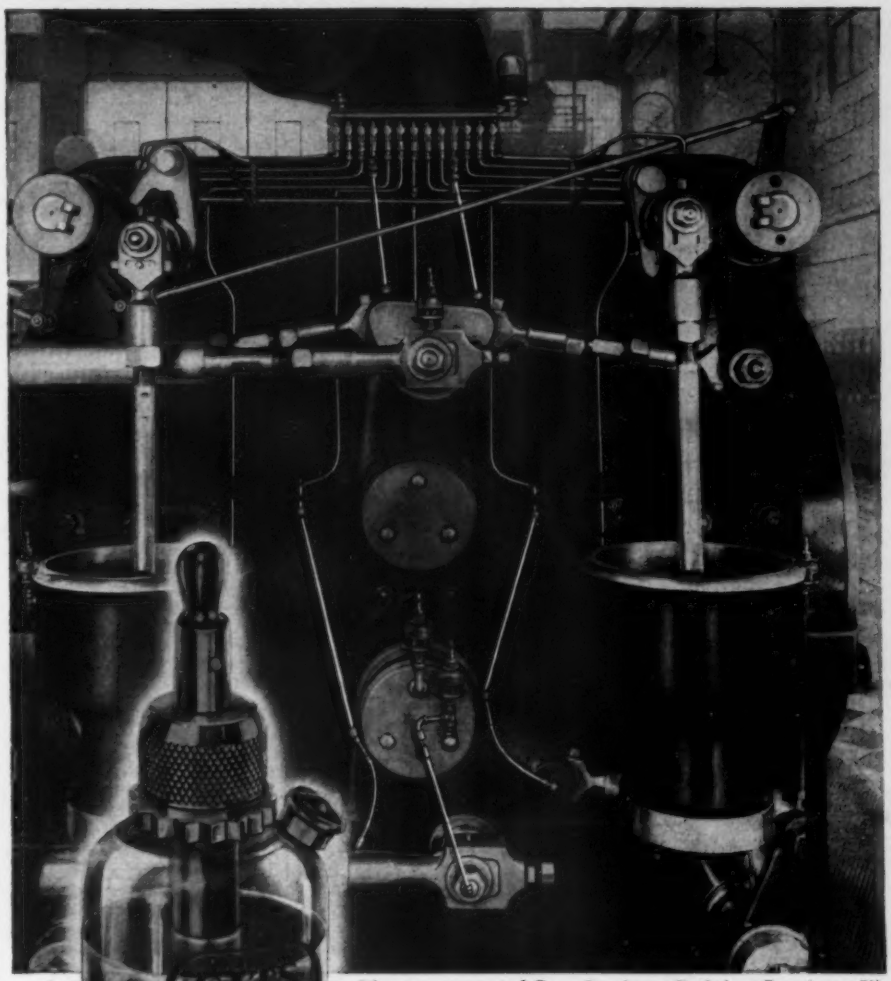



Photo courtesy of Corn Products Refining Co., Argo, Ill.



**"WE CAN DEPEND ON GITS OILERS"**

That's the experience of Corn Products Refining Co. and many other leaders of industry. It's vital for these companies to avoid costly machine down-time. They know that: (1) Burned-out bearings due to faulty lubrication are a major cause of down-time. (2) Gits oilers eliminate faulty lubrication. (3) Gits oilers help achieve the important benefits of uninterrupted machine performance: maximum production . . . no wasted lubricant . . . less power consumption. That's why, for the past 40 years, industry has looked to Gits oilers and and lubricating systems . . . for *dependable, proper* lubrication, with very low costs of installation and maintenance.

**FREE LUBRICATION ENGINEERING SERVICE** by Gits Engineering Staff, backed by 40 years of experience. Submit your problem—receive prompt recommendations. No obligation. **WRITE TODAY FOR THIS FREE BOOKLET** describing in detail the full Gits line of the most modern oilers and lubricating systems.




**GITS BROS. MFG. COMPANY**
1865 South Kilbourn Avenue • Chicago 23, Illinois

SELECT A Sterling THAT FITS YOUR JOB!




There's a Sterling Barrow for every type of hauling job, whether it's dry, bulky materials like sawdust or heavy industrial loads like castings or steel parts. Also special barrows for brick, tile, coal, concrete block and similar materials. All barrows are scientifically designed, well balanced and sturdily constructed for a long service life. Choice of wood handles or tubular steel frame, steel wheels or pneumatics. Write for new Sterling Wheelbarrow Catalog No. 61.

*(Above)*
*Model S-3* Maximum Capacity 3½ cu. ft. 16 gauge tray, all welded, no rivets, double lapped at corners. Steel channel legs. V-shaped front braces and brace support.

*(Right)*
*Model S-19* Maximum Capacity 5 cu. ft. 16 gauge tray, all welded, no rivets, double lapped at corners. Heavy-duty malleable wheel guard.

12 SPOKE STEEL WHEEL

PNEUMATIC TIRED WHEEL




IMMEDIATE SHIPMENT

STERLING WHEELBARROW CO., Milwaukee 14, Wis.

Look for this Mark of STERLING Quality

Sterling WHEELBARROWS

more than 80 Oakite Materials to solve your cleaning problems

"I Serve"

THIS could very well be the motto of your local Oakite Technical Service Representative, for he stands ready to serve you. Yes, ready to serve *you* by helping to solve your complex production-maintenance cleaning problems. Part of that service includes:

**Tank-side testing of water hardness; of soils; of temperatures; of required solution strength.**

This is the kind of service you have a right to expect and that's the kind you get from Oakite. It's service deliberately designed to prevent waste and help you increase production . . . keep costs down. Oakite Products, Inc., 54 Thames St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

*Technical Service Representatives Located in Principal Cities of United States and Canada*

## CATALOG GIVEN CERTIFICATE OF SPECIAL MERIT

A Certificate of Special Merit for 1950 was awarded new Kollsman catalog, Kollsman Instrument Division of Square D Company, 80-08 45th Ave., Elmhurst, N. Y., by the New York Employing Printers Association. It is one of 18 catalogs to be given the award. The volume of the first printing was gaged to meet the requirements of purchasing agents and engineers directly connected with the field of aviation instruments. Increasing requests received from individuals and organizations in other industries made a second printing necessary. Copies are available to this latter group at $5. each.

## FIRST CENTRAL STATION GAS TURBINE INSTALLATION OKLAHOMA CITY

The first public showing of a central station installation of the gas turbine held recently in Oklahoma City marked the end of long years of pioneering and the successful beginning of a new chapter in power generation in the United States. The General Electric 3500 kw simple-cycle gas turbine power plant is installed at the Arthur S. Huey Station of the Oklahoma Gas and Electric Company.



**Exterior view, Arthur S. Huey Generating Station, OG&E, Oklahoma City, Okla., showing the simple structure required by the gas turbine. The unit is seen through the double doors. At left is the heat exchanger unit.**

As of October 13, in more than 1500 operating hours, the gas turbine has produced approximately 5¼ million kilowatt hours at an average of 3557 kilowatts. In announcing the first results of the firing, C. C. Willis, superintendent of generating stations of OG&E, said, "On September 28, the gas turbine permitted a pick-up in total station output from approximately 51,000 kw to 58,000 kw with an over-all improvement in plant operating economy. Of this pick-up the gas turbine carried approximately 4,000 kw and the balance of 3,000 kw was achieved in plant operation. The gas turbine has carried as much as 4300 kw during this time."

This gas turbine power plant represents the first commercial application in this country for central station use of the design principles first used in the aircraft jet engine, and is much like the 4800-hp locomotive gas turbine now in regular freight service as part of its road tests in California.

(*Please turn to page* 186)

# Customer Goodwill

IS MONEY IN THE BANK

**Save it** BY PROTECTING YOUR PRODUCT FROM DAMAGE IN TRANSIT WITH

## Gaylord Boxes



DAMAGED merchandise and its accompanying irritations often result in loss of customer goodwill. You owe it to yourself to take every precaution against this loss. You can do so by permitting Gaylord's Engineering and Research Department to analyze your present container —if it's right, they'll tell you; if it isn't, recommendations will be made. No obligation, of course—just call the Gaylord office nearest you.

**GAYLORD CONTAINER CORPORATION** General Offices: **ST. LOUIS**

CORRUGATED AND SOLID FIBRE BOXES ●
FOLDING CARTONS ●
KRAFT GROCERY BAGS AND SACKS ●
KRAFT PAPER AND SPECIALTIES ●

New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle
Indianapolis • Houston • Los Angeles • Oakland • Minneapolis • Detroit • Jacksonville
Columbus • Fort Worth • Tampa • Cincinnati • Dallas • Des Moines • Oklahoma City
Greenville • Portland • St. Louis • San Antonio • Memphis • Kansas City • Bogalusa
Milwaukee • Chattanooga • Weslaco • New Haven • Appleton • Hickory • Greensboro
Sumter • Jackson • Miami • Omaha • Mobile • Philadelphia • Little Rock • Charlotte

SHENANGO-PENN *Centrifugal* CASTINGS ... KEY TO SAVINGS



*Bronze cylinder centrifugally cast and precision finished to specification by Shenango-Penn for use in manufacture of corrugated paper.*

# Major parts last longer ... cost less!

TAKE this special bronze forming roll cover, for example. Because it is a Shenango-Penn *centrifugal* casting, it combines complete uniformity, exceptionally fine, pressure-dense grain, and freedom from blow holes, sand inclusions and other common, often hidden defects.

The money-saving result, quite naturally, is greatly prolonged wear life and the plus strength that will take abnormal loads and speeds without risking costly failure in service.

This is just one of the countless types of cylinders, sleeves, liners, rings, rolls and roll assemblies produced by Shenango-Penn in ferrous and non-ferrous metals for various industries. When *you* need such parts . . . rough, semi-machined or precision finished, small or large . . . specify Shenango-Penn and profit by Shenango-Penn's specialized processes, facilities and experience.

**MEANWHILE, ASK FOR BULLETIN**

**No. 143—Centrifugal castings of non-ferrous metals and alloys.**

**No. 144—Centrifugal and static castings of plain and alloyed irons.**

**No. 145—Centrifugally cast bushing stock in all standard sizes.**

**SHENANGO-PENN MOLD COMPANY**

**2482 West Third Street Dover, Ohio**

**Executive Offices: Pittsburgh, Pa.**

SHENANGO PENN

*All Bronzes • Monel Metal • Ni-Resist • Mechanite Metal®*

(*Continued from page* 184)

The weight of the complete power plant including the compressor and gas turbine unit is only 25,000 lb. The complete unit including the generator and exciter is less than 50 feet long and 9 feet wide, and located all on the same floor level with the exception of the oil tank.

The design of the gas turbine power plant, which eliminates the need of much of the bulky equipment demanded by steam generating units, makes it especially desirable for adding capacity to existing stations.

## FOLDING CARTON-CORRUGATED BOX FOR HEAVY PARTS




Something different from the ordinary run of folding cartons and corrugated boxes is presented in container designed for the Link-Belt Company by the Gaylor Container Corp., St. Louis, Mo. The purpose of the design is to gain the maximum exterior display value of the folding carton, and at the same time secure the protective qualities of a corrugated box. Link-belt packages larger size mounted ball and roller bearings in the container. The corrugated insert provides all-around protection to the bearings. The folding carton is made of natural-color Kraft and is printed with an over-all background of brown with red lettering. The light tan of the natural Kraft is utilized as a third color to highlight the trademark and general design.

## PHEOLL ISSUES NEW "SEMS" CATALOG

A new 28-page illustrated "Sems" (lock washer screws) catalog No. 80-A has been issued by the Pheoll Manufacturing Co., 5700 Roosevelt Road, Chicago Ill. "Sems" are described as an assembled screw and free-rotating washer. The two parts form an integral unit, with the washer securely held in place by the rolled screw thread, but rotating freely on the screw shank below the head. During handling and driving it is impossible for the washer to slip or work away from its position immediately beneath the screw head, thus reducing assembly time. Other advantages are described in the catalog. Products illustrated include screws in round, pan, truss, fillister, flat and oval head styles. These are listed in both slotted and Phillips re-

(*Please turn to page* 190)

# B.F.Goodrich

## announces

# TW TIRE AND WHEEL ANALYSIS PLAN

## for materials handling

### HOW IT WORKS

An experienced tire and wheel man will survey your operation. He will study loads, hauls, handling equipment, floors and hauling surfaces, and discuss any special tire and wheel problems you may have. On completion of this survey the BFG man, without charge or obligation on your part, will submit recommendations as to the best type and size tires and wheels for your particular service with information on the longest-wearing compounds and on retreading. He will also provide suggestions on tire care and maintenance.

### HOW YOU SAVE

Tire and wheel costs can be cut as much as 50% through the application of the right type, size and tread compound, to the job. Additional savings are made through protection of floors, equipment and cargo. (Previous studies show improvements can be made in two out of three operations.)

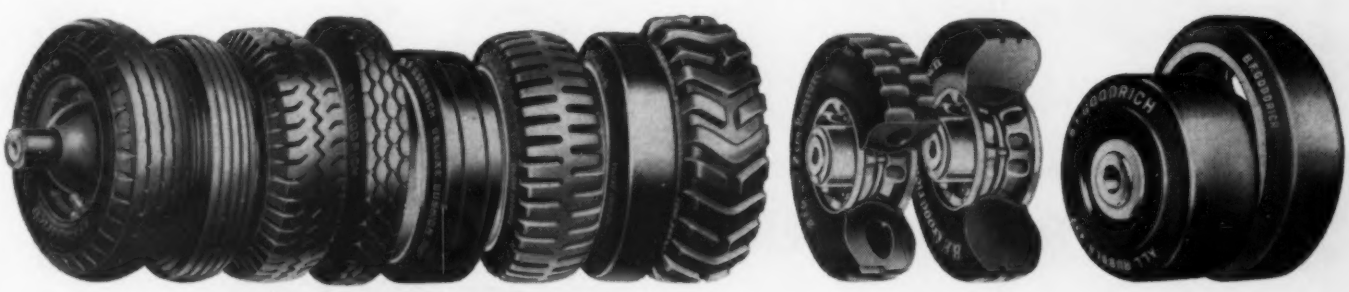
Proper tire maintenance alone can cut tire and wheel costs 10% to 20%.

### WHY YOU GET IMPARTIAL RECOMMENDATIONS

No other company offers as wide a range of types, sizes, and tread compounds as B. F. Goodrich. There is no selfish reason for a B. F. Goodrich man to push any one type of tire against another. He has them *all.* His advice is impartial.

### 14 TYPES OF TIRES—6 DIFFERENT TREAD COMPOUNDS

B. F. Goodrich offers a complete line of tires for materials handling equipment—pneumatics, puncture-sealing inner tubes, solids including pressed-on and vulcanized-on types, zero pressure types (semi-pneumatics). There's a wide choice of tread designs in each type and 6 different tread compounds for 6 different purposes in the solid tires. Only B. F. Goodrich has this complete line of types, compounds and sizes. *Today—mail the coupon for information on this new* and practical Tire and Wheel Analysis plan. A similar program is available for manufacturers of materials handling equipment.







The B. F. Goodrich Co.
Department TW-31
Akron, Ohio

Please give me additional information on your Tire and Wheel Analysis plan.

Name_____

Title_____

Company_____

City_____ State_____



*Want Additional Product Information? See Page 19.*

# Sensational new

# ROXCO

*it's individually*

## REGISTERED

*it's completely*

## GUARANTEED




**TRIMO-ALLOY WRENCH . . .** Roxco's only Rival . . . an all alloy-steel heavy duty pipe wrench long famous for ruggedness. Different in design, but has power comparable to Roxco.



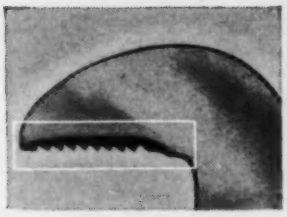
*Prove its superiority for yourself!*

## SPECIAL MONEY-BACK TRIAL OFFER

Buy one "Registered" Roxco and use it for your toughest jobs. If you don't agree it stands up better . . . is handier, faster to use . . . is a bigger value than any pipe wrench you've ever used . . . return *that one* trial Roxco direct to us (not the seller), within sixty days with a note of price paid and reason for returning. We will refund your money. This get-acquainted offer good until Dec. 31, 1950. Trimont Mfg. Co., Roxbury, Mass.



# "Registered" ROXCO . . . First Pipe Wrench Engineered by Stress Analysis to Combine Maximum Strength with Minimum Weight



See dark Hardened area

*Here,* at last, is a pipe wrench that's a brute for strength, yet a beauty to handle.

No longer is there any need to tolerate useless weight in order to get dependable strength. Through stress analysis during design, useless metal that means tiring weight was engineered out of the new *Roxco.* Extra metal, exactly where needed for extra strength, was engineered in.

The lighter, handier, faster-working *Roxco* actually exceeds by a good margin the strength requirements of Federal Spec's. for Heavy Duty Pipe Wrenches, Type II, GGG-W-651a.

In many other ways, too, *Roxco* is the most practical pipe wrench ever known. Read all its superior features . . . the ratcheting action that matches any man's speed . . . the tough jaws with induction hardened teeth . . . the unique reinforcing shoulder behind insert jaw . . . and all the others. Get a trial *Roxco* . . . judge it on the job. It's made in sizes 6" to 48". No gamble because every wrench is . . .

**Individually REGISTERED . . . Completely GUARANTEED**

Special design and quality control enable us to back the *Roxco* to the fullest extent. Every wrench is given its own serial number and fully guaranteed . . . *every* part of it . . . against breakage in any normal heavy duty use.



## ✓ Check these "engineered" features

**1 Extra Strength Based on Stress Analysis:** Extra metal at critical points provides much higher resistance to failure. Withstands unusual stress in "side pull".

**2 Lighter Weight Achieved:** Stress analysis showed where useless metal could be eliminated to produce a lighter, handier wrench.

**3 Uniform Jaw Hardness and Strength:** Both jaws are drop-forged alloy steel. Teeth are hardened by automatically-timed, localized induction process at wear points, yet tough core of jaws is retained for strength.

**4 Reinforcing Shoulder Behind Insert Jaw** resists unusual stress. Assures long, trouble-free service.

**5 Rapid Ratcheting Action:** New, simplified cushion action replaces complicated spring. With Roxco tooth design, it prevents seizure on pipe and permits fast ratcheting — as fast as user can move his hand. Accurate fit of parts saves lost motion—speeds jobs.

**6 Comfort-Shaped, Palm-Fitting Handle:** New wider, more comfortable handle — makes work easier, cuts worker fatigue.

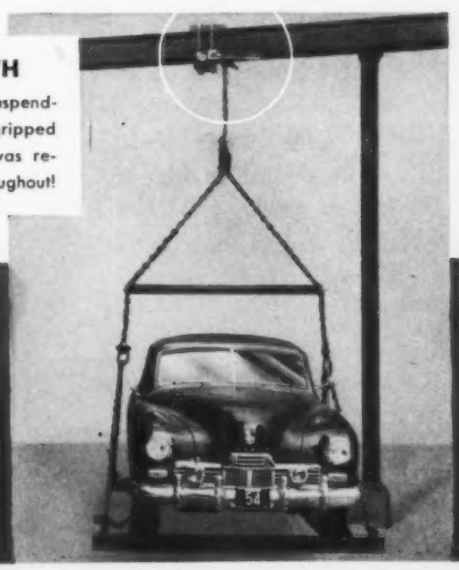
**7 Reinforced Housing** embodies a hammer face to break cast fittings.

**8 Handy, Accurate Pipe Scale** permits quick adjustment to desired size.

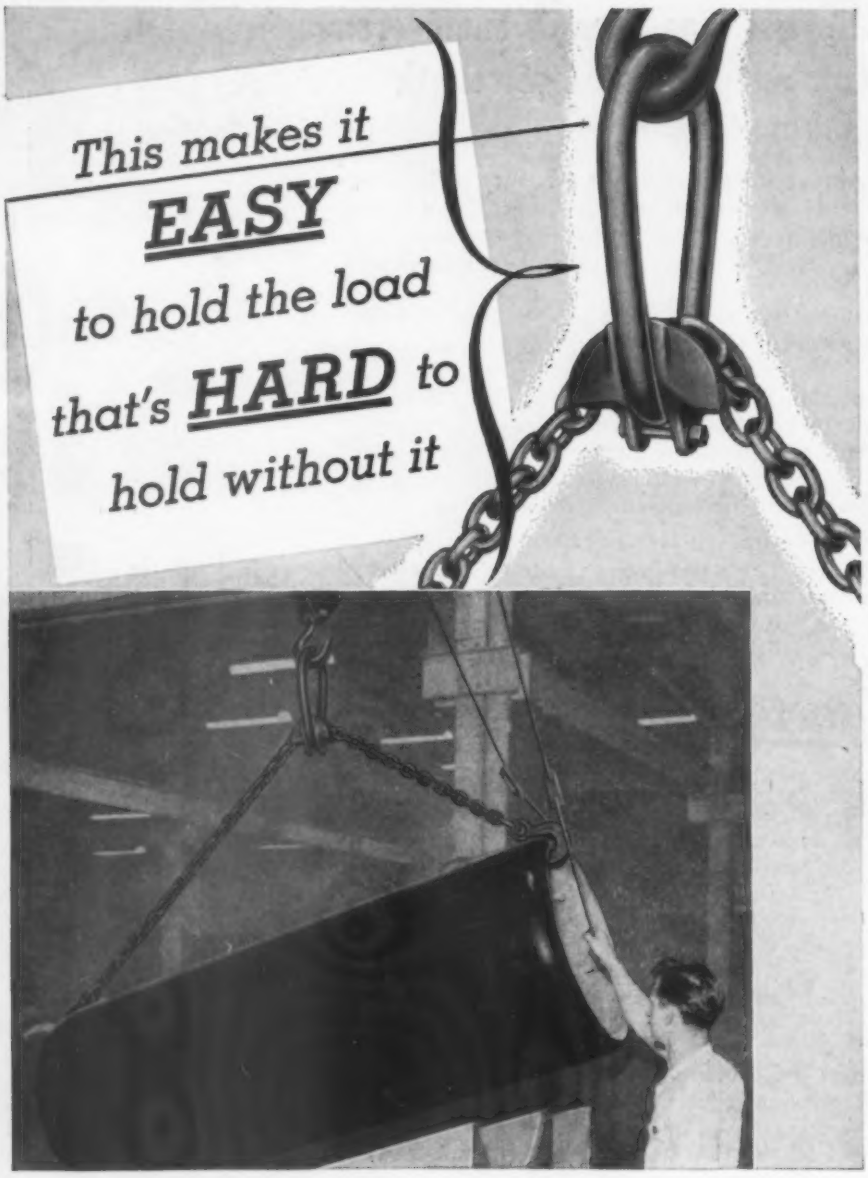
**Special Metallurgical Formula:** Roxco Metal, combined with scientific heat treating, means superior strength throughout.

**AMAZING TEST OF STRENGTH**

4510 LBS. of automobile and rigging was suspended from the handle of a stock 24" ROXCO gripped on a steel shaft. No distortion when the load was removed—the wrench was 100% perfect throughout!



TRIMONT MANUFACTURING CO.
Division of Aetna Industrial Corporation
55 Amory Street, Roxbury 19, Mass.
Makers of Wrenches, Pipe Cutters, Vises and Other Trimo Time-Tested Tools.




## The New ACCO Sling Chain Adjuster

*—a Safety Measure and a Work Saver*

• It comes as a complete unit—Pear Shaped Link, Adjuster and Single Sling with hooks at both ends. Slings of "85" and "125" ENDWELDUR steel chain—from ½" to ⅞"—Link and Adjuster sized to correspond to size of chain. Length of chain to your specification.

Your AMERICAN CHAIN distributor can give you detailed information—capacities, recommended sizes, prices, etc.

ACCO

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE

*In Business for Your Safety*

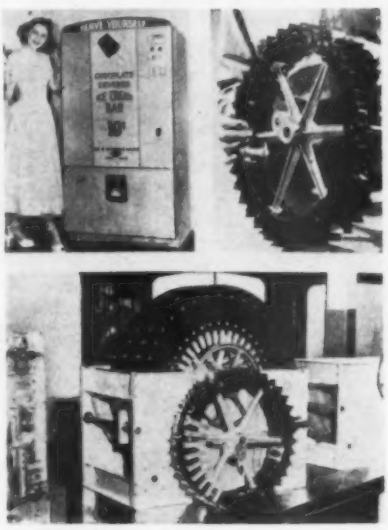

(*Continued from page* 186)

cessed head types. Hexagon head "Sems" are also available in plain, indented and slotted head types. The illustrations also show a broad range of lock washers assembled on various types of screws.

This catalog is especially designed to assist personnel responsible for specifying and ordering industrial fasteners and holding devices.

* * *

### PLASTIC PARTS MAKE BIG SAVINGS IN COST OF VENDING MACHINE



Making the vital parts of this new ice cream vending machine (upper left) of plastics instead of metal saved the manufacturer $313 on each machine—nearly 35 per cent of the retail price. The machine serves up ice cream pops at the drop of a coin, makes change when necessary, and automatically reloads its four dispenser units from a large storage space. The dispenser unit rings (upper right) are molded in two circular sections from Bakelite general purpose phenolic material by Plastic Fabricators, Inc., of Fernwood, Del. Co., Pa., and fastened together on a spider. Made this way, each dispenser ring costs $76 less than the die-cast metal ring originally used—saving $304 on each vending machine. Substituting eight shaft bushings of molded phenolics (six cents each) in place of soft metal bushings ($1.20 each) saved $9.12 more per machine. The shift to plastics speeded up production by eliminating several machining and finishing operations. It produced a more efficient machine 30 pounds lighter than the model with metal dispenser rings and bushings. Also, ice cream pops don't stick to the plastics dispenser units. Elsewhere in the vending machine (bottom) laminated plastics made with phenolic varnish are used for drum facings and spacer bars on the rotary units because they are strong, light, easy to assemble, dimensionally stable and they won't corrode. The mechanical ice cream salesman is jointly manufactured by Eastern Engineering and Sales, Inc., and Dexdale Hosiery Mills.

(*Please turn to page* 192)




(Partial view of the enormous new lubricating oil plant at Lake Charles, La., where this great new oil is processed.)

# "ANTI-FOULING" OIL made by the Remarkable new "HEART-CUT" PROCESS

**This new oil—the best known to science... gives you a cleaner engine...more economy ...minimum carbon residue.**



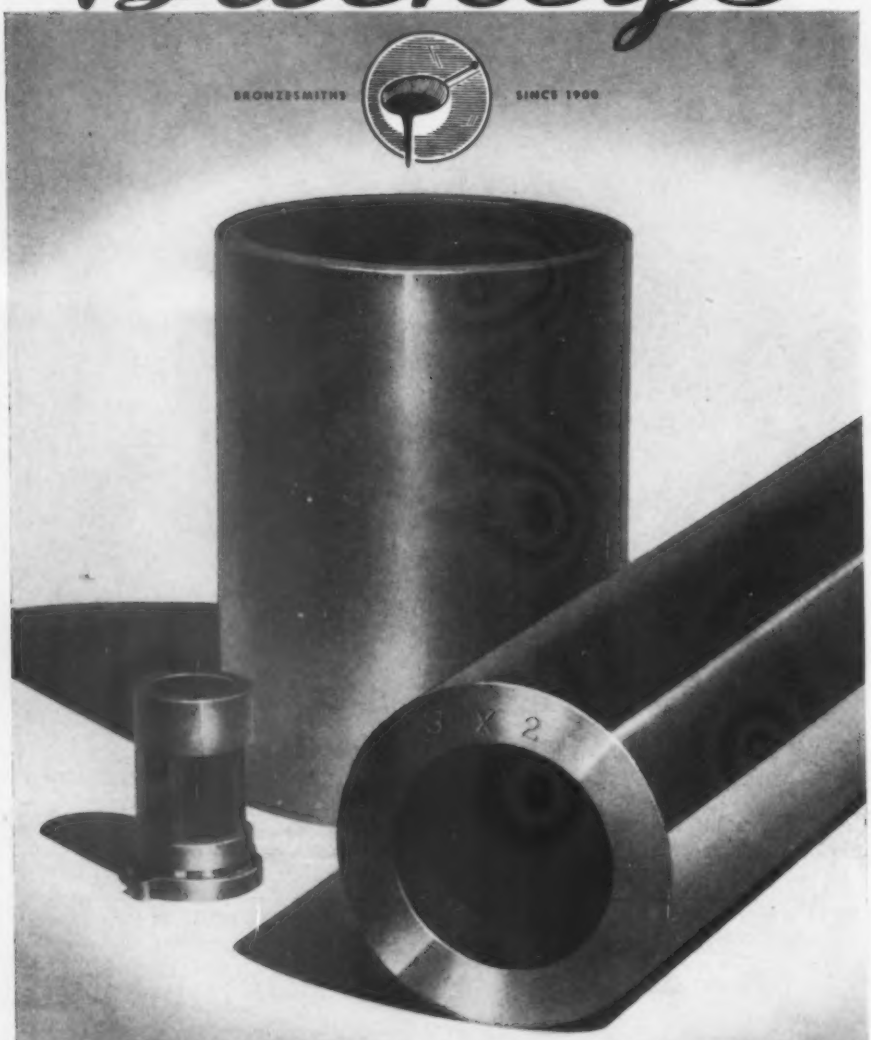

It's here now! The remarkable motor oil from the giant new $42,000,000 lubricating oil plant at Lake Charles, La. The plant that's been the big talk of the oil industry for months.

New Premium Koolmotor is made by the unique "Heart-Cut" Process which retains only the choicest part of the finest crudes. *It's so superior that in recent engine tests it outscored nine other major premium motor oils.* No wonder Premium Koolmotor is better in every way! Cleans better, seals better, cools better and fights acid, sludge and corrosion far more effectively. Switch to this remarkable new oil today.

*start saving Dollars today...stop at*

**CITIES SERVICE**

# Buckeye




**STANDARD STOCK BEARINGS**
**FULLY MACHINED BARS**
**SPECIAL BEARINGS**

**Producing millions of standard and special bronze bearings for thousands of power transmission applications has taught us a lot about bronze, the ideal bearing metal. Our specialized service to America's Industries for nearly a half century, enables us to offer highest quality bearing bronze at a cost made possible only by latest production methods. Do you have a special bearing problem? The Buckeye Brass and Manufacturing Company, 6410 Hawthorne Avenue, Cleveland 3, Ohio.**

# BEARING BRONZE


## NEW BLADELESS TRASH PUMP REDUCES M.R.O. COSTS

A new type pumping unit for handling trash and sewage, incorporating a feature heretofore considered an engineering impossibility, was announced recently by Fairbanks, Morse & Co., Chicago, Illinois.

This new pump is different from all others in that its impeller is bladeless, having no vanes or blades on which trash and other fibrous material can catch. Instead the fluid passes through the impeller through a single rotating channel or passage way with the centrifugal force doing the work.



**Showing some of the rags, cloth and pieces of canvas that passed through the pump without clogging it.**

Wound somewhat like a corkscrew, this curved channel starts at a small radius at the axis of rotation and then fans outward in a helical path. Thus centrifugal action throws the fluid against the sides of the bent channel or passage way and because these slant forward the fluid carrying the solids and trash is driven along the channel. This is what achieves the pumping action. The diameter of the rotating channel at its narrowest point is equal to the diameter of the inlet pipe; hence almost anything that will enter the eye of the pump will be carried through without clogging.

The pump will handle much larger trash, particularly of the fibrous type, than will conventional sewage pumps having blades in the impeller. In actual tests the new pump handled trash 10 to 25 times larger than that handled by trash and sewage pumps of the conventional type. Being virtually clogfree, the pump will require less attention in actual operation and less maintenance thereby effecting considerable dollar savings.

At the plant demonstration four pumps stood in a row: one of the new bladeless type and three of the conventional design. Through a hopper leading to the pumping mechanism of each, various materials were dropped into the water flowing through the impellers of each pump. Tennis balls passed through each impeller in a flash. Small strips of canvas likewise passed through each pump without much trouble. Then, as the strips of canvas became slightly larger, the conventional type of trash pumps began to show difficulty in handling the material. They

(*Please turn to page* 194)



**1** **1875**—For centuries, hard labor and a paintbrush were man's main means of adding beauty and color. But, with the industrial revolution at hand, new devices were sorely needed to break this bottleneck.



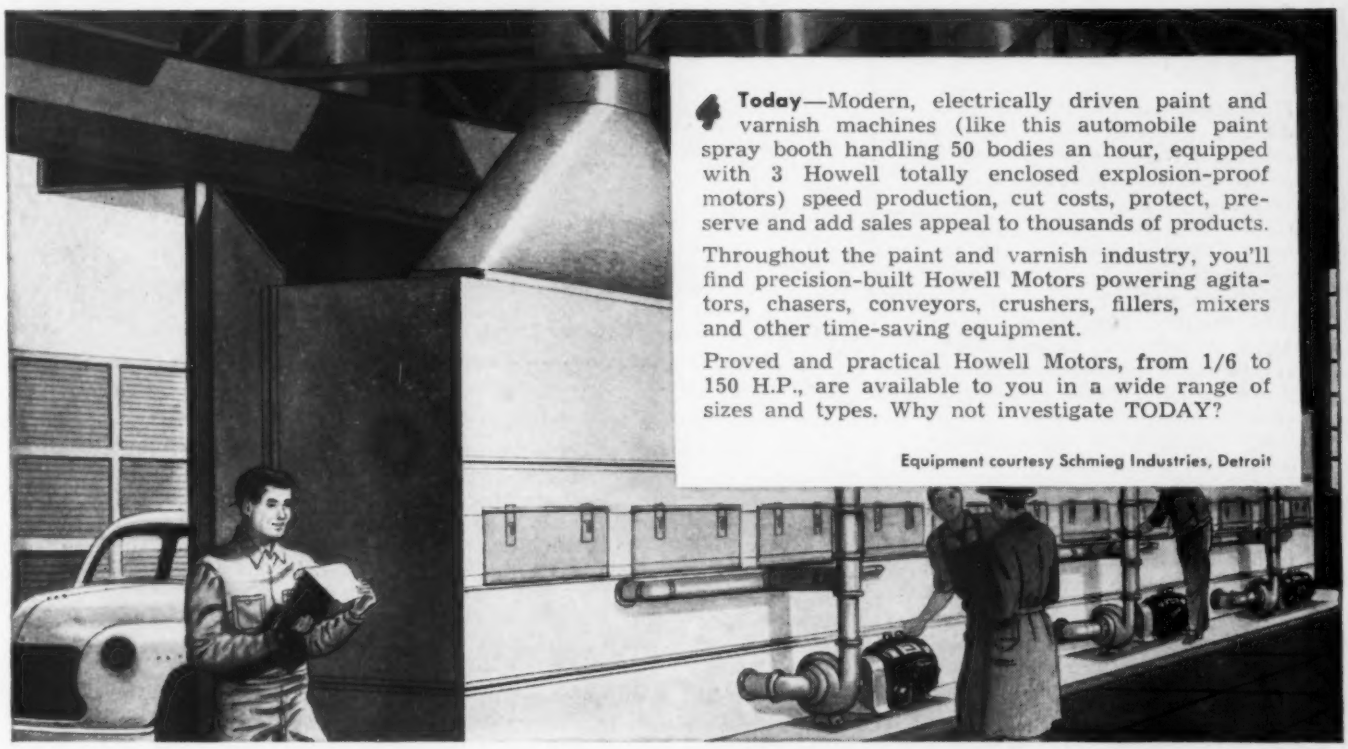
**2** **1900**—The artist's airbrush was born. On its heels came the paint spray gun. Both products, strangely enough, stemmed from the atomizer used by doctors to prevent colds. Painting swung into high gear.



**3** **1915**—Portable paint-spraying equipment was introduced in this, the year Howell "Red Band" Electric Motors arrived. Soon these rugged motors made important contributions to this and other industries.

# PAINT... protects, preserves, decorates and sells!

**(AND HOWELL MOTORS HELP SPEED MODERN PAINTING PROCESSES—CUT COSTS)**



**4** **Today**—Modern, electrically driven paint and varnish machines (like this automobile paint spray booth handling 50 bodies an hour, equipped with 3 Howell totally enclosed explosion-proof motors) speed production, cut costs, protect, preserve and add sales appeal to thousands of products.

Throughout the paint and varnish industry, you'll find precision-built Howell Motors powering agitators, chasers, conveyors, crushers, fillers, mixers and other time-saving equipment.

Proved and practical Howell Motors, from 1/6 to 150 H.P., are available to you in a wide range of sizes and types. Why not investigate TODAY?

Equipment courtesy Schmieg Industries, Detroit

*Free enterprise encourages mass production, supplies more jobs—provides more goods for more people at less cost.*



Howell totally-enclosed, explosion-proof motors for use where inflammable liquids or gases are handled or stored.

# HOWELL MOTORS

**HOWELL ELECTRIC MOTORS CO., HOWELL, MICH.**

***Precision-built Industrial Motors Since 1915***

HOWELL Red Band MOTORS

## For Complete Inspection under Magnification *Fast*



the Kodak
**CONTOUR PROJECTOR**

**SHOWS** { contours, of course, surface details . . . deep, blind holes

Need fast and accurate inspection of difficult shapes or easily distorted materials? Here's your solution:

The Kodak Contour Projector is very easy to use. Your operator—comfortably seated in a fully lighted room, unhampered by hoods or curtains—can dial up to 5 different magnifications without refocusing. Undistorted projections from 10× to 100× are seen on a 14-inch screen . . . seen in even, over-all brilliance many times that previously available with the same lamp power.

It's a versatile tool. *By just turning a knob, you get illumination through the lens itself to show surface conformations and deep, blind holes in full, brilliant detail.* And there's always 8 full inches from object to lens . . . at all magnifications.

▶ A new booklet gives full details of this moderately priced precision instrument with so many uses in fast inspection. *Write for it.*

**EASTMAN KODAK COMPANY**
Industrial Optical Sales Division
Rochester 4, N. Y.
Please send your booklet on the Kodak Contour Projector.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE_____
STATE_____

Kodak
TRADE-MARK


(*Continued from page* 192)

were turned off when they were choked on small pieces of canvas, handkerchiefs and diapers.

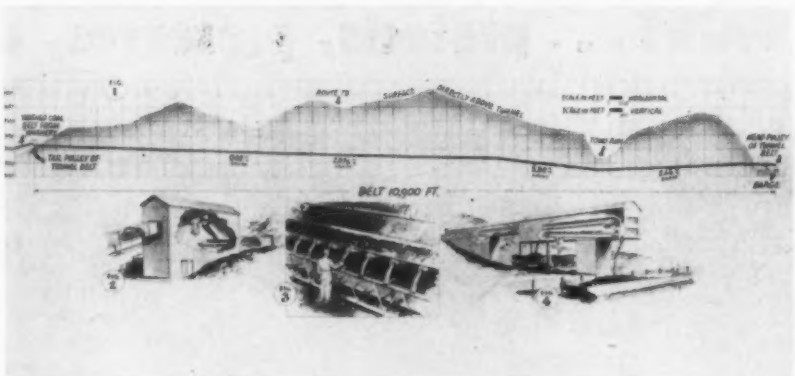
The bladeless pump continued, however, in handling this material without any difficulty. About 100 tennis balls were poured into the hopper and came through the outlet pipe immediately. Handkerchief-size canvas squares, diapers, pieces of canvas up to six feet long and three feet wide emerged from the new 4-inch bladeless pump without difficulty.

Then, to show the gentle pumping action achieved by the bladeless impeller, crates of oranges, apples, and even hard boiled eggs, were poured into the hopper and passed through the bladeless pump. The hard boiled eggs came through whole and in most cases not even the shells were cracked. Finally, to show the unusual ability of this pump to handle trash of all kinds, one of the technicians in the laboratory peeled off his coat and it was sent on a speedy trip through the pump. And lastly, a pair of overalls was dumped into the hopper and came out almost immediately.

The company claims outstanding advantages in their new bladeless trash pump. These include reduced attention in maintenance due to their ability to handle trashy materials of all kinds and the use of smaller driving motors resulting in savings both in initial costs and operating costs.

The pump is available in sizes from 2″ to 5″.

## Conveyor Belt Extends 10,000 Ft. Through Tunnel




**Artist's conception of profile of world's longest single unit conveyor belt, just installed at the Weirton mine of Weirton Steel Company, near Morgantown, W. Va., by the mechanical goods division of the Goodyear Tire and Rubber Company shows how the coal is carried through a two-mile tunnel from transfer house to loading point on the Monongahela river.**

The conveyor has a vertical drop of approximately 153-feet in the 10,900 feet distance from washery to the tunnel mouth at the river.

It was decided to make the installation as one single belt to eliminate the hazards and added operating costs of transfer points.

Because of the unique layout of this belt it was essential that any stretch or shrink be reduced to the absolute minimum, as it was impossible to provide space for any takeup arrangement that would accommodate more than about 40 feet of belt.

The construction specifications for Goodyear Steel Cord Belt were found to be the only one that had suitable dimensional stability, as the takeup required will not be more than about 25 feet despite the 22,900 feet length of the belt.

Before deciding to convey coal through the tunnel, the Weirton Steel Company considered plans to haul the coal in mine cars on rails laid to the river, but finally gave up the idea as being less economical in final cost than the big belt.

After barges are loaded with coal at the tunnel's mouth, they will proceed down the Monongahela river to the Ohio river at Pittsburgh and from there to the Weirton Steel Company at Weirton, W. Va.

The world's longest single conveyor belt, for use in transporting coal at the Weirton Mine of the Weirton Steel Company, near Morgantown, W. Va., has just been installed by The Goodyear Tire & Rubber Co.'s Mechanical Goods division, Akron, Ohio.

This Compass-150-Steel Cord belt will haul coal from the washery located near the mine through a tunnel in an adjacent hill to a tipple on the Monongahela river for loading into barges. Measuring 10,900 feet from center of the head to center of tail pulley, installation of the endless rubber, steel and cotton belt will establish a new record for length for any type belt.

Goodyear furnished more than 22,000 feet of belting for the haul through the tunnel and return. Weighing approximately 122 tons, the construction of the new "super rubber railroad" consumed 152,798 pounds of rubber, 50,941 pounds of cotton and 39,754 pounds of steel cable.

The belt is 30 inches wide and will be required to deliver, approximately 250 tons of coal per hour while conveying at a speed of 300 feet per minute, and will be driven by a 200 H.P. motor. A lump of coal dropped on the belt at the washery end will dump into a waiting barge on the Monongahela river 36 minutes later. (*Please turn to page* 196)

# Eaton Permanent Mold Gray Iron Castings

for
DOMESTIC APPLIANCE
PARTS



- Free machinability
- Uniform structure throughout the casting
- Good tensile strength
- Freedom from growth and segregation
- Ability to take a high surface finish

Send for your copy of the illustrated booklet, "A Quick Picture of the Eaton Permanent Mold Process for Producing Gray Iron Castings."

## EATON MANUFACTURING COMPANY

CLEVELAND, OHIO

FOUNDRY DIVISION: 9771 FRENCH ROAD • DETROIT 33, MICHIGAN

**PRODUCTS:** Sodium Cooled, Poppet, and Free Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Rotor Pumps • Motor Truck Axles • Permanent Mold Gray Iron Castings • Heater-Defroster Units • Snap Rings Springtites • Spring Washers • Cold Drawn Steel • Stampings • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers



Verdict *for*

*COTO-COIL on every count*

Coto-Coil Windings bring you the best for the least.

Wherever electric or electronic controls are called for . . .

Wherever precision is a prime necessity . . .

Wherever there are special conditions to be overcome . . .

The Judgement Goes to Coto-Coil
Coil Specialists Since 1917

**BOBBINS**

**ACETATE INTERLEAVE**

*(Coalesced under W.E. Pats.)*

**PAPER INTERLEAVE**

**COTTON INTERWEAVE**

**TAPED FORM WOUND**

**UNIVERSAL SINGLE OR MULTI-PIE CROSS WOUND**



**COTO-COIL CO., INC.**

**COIL SPECIALISTS SINCE 1917**

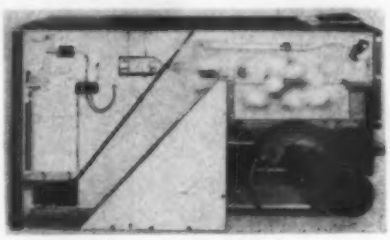
**65 Pavillion Avenue, Providence 5, R. I.**

## STRUCTURAL FIBER INSULATING BOARD COMMERCIAL STANDARD

Commercial Standard CS42-49 (superseding CS42-43), Structural Fiber Insulating Board (Fourth Edition), issued by the U. S. Department of Commerce, is now available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at 10¢ per copy.

## ELECTRONIC RAT TRAP WITH AUTOMATIC INSECTICIDE DEVICE

Fully automatic rat trap that kills rats electrically, marketed by Electronic Rat Traps, Inc., 80 West Main Street, Rochester 4, N. Y., incorporates a new automatic insecticide device for eradicating fleas and ticks that infest the animals, as the rats are electrocuted in the rat trap.



**The rat is dead; the fleas are dead; the ticks are dead.**

As the electrically charged death plate clamps down upon the rat in the electrocution chamber, a jet spray of the insecticide is released. Thus the trap does a complete job of vermin extermination. The fleas and ticks that infest rats are often the carriers of bubonic plague, typhus fever, tularemia, murine typhus and rat mite dermatitis. It is claimed that the traps kill as many as fifty rats per trap in a single night.

## APPROVE SYMBOL FOR INDICATING SALVAGABLE KRAFT MULTIWALL BAGS

In a move to stimulate the salvage value of used multiwall paper bags, members of the Paper Shipping Sack Manufacturers' Association have approved a program for marking with a standard symbol all multiwall bags made of natural kraft paper which are suitable for repulping.

Four groups have a vital interest in the plan, namely (1) pulp consumers; (2) waste material dealers; (3) bag emptiers; (4) bag manufacturers.

A clearly imprinted emblem on bags which may be used for repulping purposes, it is felt by the bag manufacturers, will create a more confident approach by the waste dealers and pulp consumers to the utilization of such bags. This should provide steadier market for the bag emptiers and in turn enhance the competitive position of the multiwall bag in relation to other containers.

While the plan has been approved by members of the PSSMA, the matter of imprinting the symbol "ANK" (all na-

(*Please turn to page* 198)

REFLECTIONS OF A ROPE BUYER (YOU, PERHAPS?)

# "Why shouldn't I buy rope on price?"



## . . . because paying less per lb. can mean paying more to use

When you buy rope, you are actually buying rope service.

Extend the life of your ropes and you have cut the cost of that service. Let's apply this logic to your own rope purchases. Here is a typical example.

Suppose you can buy rope at 3¢ a pound less than PLYMOUTH SHIP BRAND Manila. Assume that in a given service PLYMOUTH SHIP BRAND rope will last six months. Comparative tests of ten leading brands show that under the same conditions the average of these brands would last only 4.8 months. This means that if you buy these brands at 3¢ per pound less, it actually costs you 1.5¢ per pound per month more than if you used PLYMOUTH SHIP BRAND Manila.

***You can prove Plymouth Ship Brand savings*** yourself by sending for a unique cost-of-service chart. It is based on these comparative tests, shows just how they work, lets you see how much you actually save by using PLYMOUTH SHIP BRAND Manila. Send to.... PLYMOUTH CORDAGE COMPANY, Plymouth, Massachusetts.

SEE AND HEAR "THE PLYMOUTH STORY." *If you have not yet seen this color, sound film, write for an early showing. It shows how much* more *Plymouth puts into its ropes, so that the user may get* more *out of them.*

**PLYMOUTH**
*Cordage Products*

**THE ROPE YOU CAN TRUST BECAUSE IT IS ENGINEERED FOR YOUR JOB**

FREE!



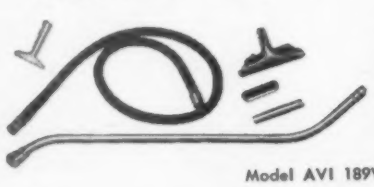

# Write for this New Catalogue

Modern maintenance requires modern methods!

In buildings of all sorts, General Electric Heavy-duty Vacuum Cleaners are speeding up the cleaning job, cutting down maintenance expense.

All models and sizes, including furnace cleaner, heavy-duty hand cleaners, and special tools, are shown in a new catalogue which is yours on request. We'll gladly arrange for a survey of your building's cleaning requirements and recommend proper cleaning equipment without obligation. Use the coupon for convenience.

**Moderate-priced lightweight model is convertible to wet pickup at small extra cost.**





Model AVI 189WP

**Commercial Cleaners**

**GENERAL ELECTRIC**

GENERAL ELECTRIC CO., Dept. 22-1219
1285 Boston Ave., Bridgeport 2, Connecticut

Our most serious cleaning problem is.....

Without obligation, please send new catalogue. We'd like a survey (check if desired)

NAME.....

FIRM.....

ADDRESS.....

CITY..... STATE.....


(*Continued from page* 196)

tural kraft) will be entirely at the option of the bag manufacturer or his customers.

It should be noted that while the plan has now been approved, it may be some months before the waste dealers and the consumers of the used bags for repulping will find the bags marked in substantial volume. Present inventories will, of course, be appearing for some time unmarked.

It has been agreed that the "ANK" symbol is to be printed on the backs of bags made of all natural kraft paper, just above or below the Consolidated Freight Classification certificate. The PSSMA notice to the multiwall bag manufacturers points out that the symbol must not appear on multiwall bags constructed with any plies of wet-strength, asphalt laminated impregnated, polyethylene or wax-treated papers.

The program has been hailed as highly constructive by the Waste Paper Institute of the National Association of Waste Material Dealers. This body has urged such a move for some time as an important step in conservation of an important natural resource.

1 1 1

## MOLD 35 POUND PHENOLIC TELEVISION CABINET

Continued high level of sales and production of plastics are indicated for the coming year, according to George C. Miller and C. W. Blount, vice presidents and general sales managers, respectively, of the Bakelite Corporation's thermoplastics and thermosetting departments.

Greatest increase in the sales and production of the various plastics is shown in the rapidly expanding volume of vinyl plastic film. Mr. Miller set the industry's current monthly output as approximately 40,000,000 to 50,000,000 square yards as compared with a monthly production of 5,000 to 10,000 square yards only ten years ago.

Additional increases in thermoplastic materials were said by Mr. Miller to be in the wide use of polyethylene for molded bottles "that combine the advantage of only about one-third the weight of glass, being non-breakable, and serving as atomizers for the dispensing of liquid contents." The use of polyethylene resins for coating paper and other packaging operations is expanding at a high rate.

An example of heavy volume in using resins for coating paper and cloth is the recent development of a new type milk container making possible a saving of more than 50% in shipping and storage space. These containers are made by coating rolls of paper with tasteless, odorless and non-toxic Vinylite resins from which containers are die cut in the flat and shipped to dairies in this manner. The blanks are then fed into equipment at the dairy, that automatically forms, sterilizes, and fills the containers in a rapid series of operations.

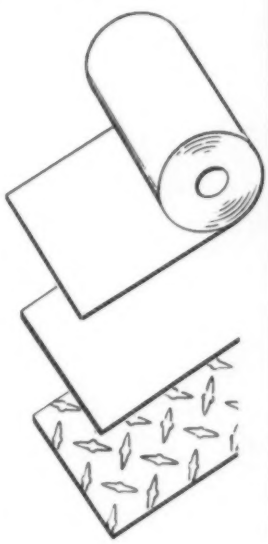
(*Please turn to page* 201)

# FAST LOCAL SERVICE on ALCOA ALUMINUM

## from Distributors in principal cities

Your aluminum stock is as handy as your telephone when you buy from your nearby Alcoa Distributor. You can rely on him for fast service—in most cases, overnight delivery—of all distributor standard items listed on this and the next page. Rely on him, too, for technical help — your choice of alloys and finishes; Alcoa booklets and how-to-do-it sound motion pictures. Behind your Alcoa Distributor stand Alcoa's more-than-60 years of pioneering and engineering aluminum.

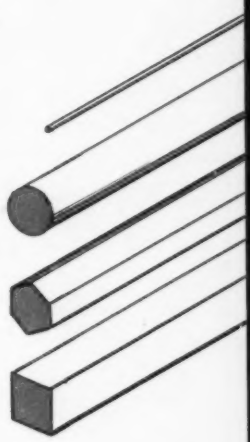
## ALCOA ALUMINUM SHEET and PLATE



Combine strength and corrosion resistance with light weight—build it of Alcoa Aluminum Sheet or Plate. Always dependably uniform. We are qualified to advise you on alloy, temper, and finish selection. Our Distributors' stocks include the following items in standard thicknesses, sizes, and finishes:

Coiled Sheet and Circles • Flat Sheet and Plate • Alcoa Lighting Sheet • Industrial Roofing Sheet • Tread Plate • Alclad Sheet and Plate

## ALCOA ALUMINUM WIRE, ROD and BAR



Complete selection of wire, rod and bar in all popular alloys, sizes and shapes. Alcoa Aluminum Wire, Rod and Bar give you approximately three times as much lineal footage per pound as heavy metals; Alcoa Distributors have a wider choice of shapes and alloys than any other light metal source. They maintain stocks of:

Brazing Wire • Welding Wire • Rivet Wire • Rod • Bar • Screw Machine Stock • Square Edge Rectangles

*Yours for the asking...*

ALCOA

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Aluminum Company of America
653 Gulf Building
Pittsburgh 19, Penna.

Gentlemen:

Please send the booklets checked:

- ☐ Alcoa Aluminum and Its Alloys
- ☐ Finishes for Aluminum
- ☐ Forming Alcoa Aluminum
- ☐ Machining Alcoa Aluminum
- ☐ Alcoa Aluminum Heat Exchanger Tubes
- ☐ Alcoa Aluminum in Automatic Screw Machines
- ☐ Riveting Alcoa Aluminum
- ☐ Welding Alcoa Aluminum
- ☐ Alcoa Extrusions
- ☐ Alcoa Aluminum Pipe and Fittings

Name.....Position.....

Company.....

Address.....City.....State.....

# Your local distributor of Alcoa Aluminum is here:

## ALCOA ALUMINUM PIPE AND TUBING



When you buy pipe or tubing, remember this: Alcoa Aluminum Tubing and Pipe go approximately three times as far per pound. They offer you corrosion-resistance for oil, gas, air and other fluid lines at *lower cost per foot* than any other corrosion-resistant metal. Easier to install, too—aluminum's lighter weight speeds installation, saves labor costs.

Stocks of the following items ready for quick shipment:

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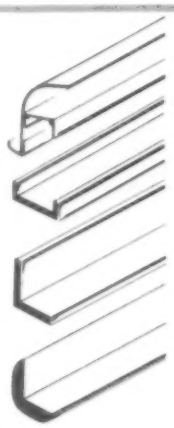
## ALCOA ALUMINUM FASTENERS



Fasten aluminum with aluminum fasteners for strong, tight joints that stay strong. Eliminate red rust and minimize galvanic corrosion. For the best, most complete line of aluminum fasteners, specify Alcoa Aluminum Fasteners. The following items are in stock:

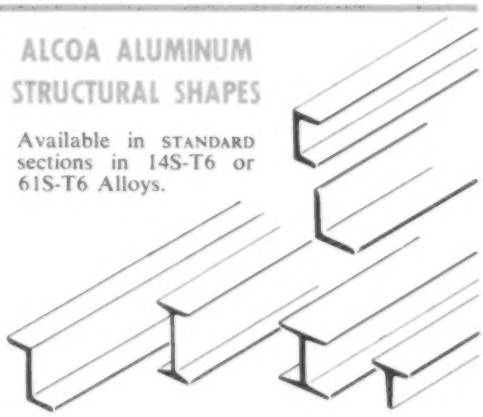
Sheet Metal Screws · Wood Screws and Lag Bolts · Machine Screws · Hex Head Bolts and Cap Screws · Hex and Square Nuts · Standard Washers and Lock Washers · Rivets—all types · Nails · Wing Nuts · Cap Nuts · Castle Nuts · Machine Screw Nuts

## ALCOA ALUMINUM EXTRUSIONS



You have a choice of 142 Alcoa Aluminum Extruded Shapes at your distributor's! These extrusions can be sawed, drilled, tapped, formed, and joined easily. Ask our Distributors to show you the extrusions available from stock.

## ALCOA ALUMINUM STRUCTURAL SHAPES



Available in STANDARD sections in 14S-T6 or 61S-T6 Alloys.

Postage Will Be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

**BUSINESS REPLY CARD**

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**ALUMINUM COMPANY OF AMERICA**

**653 GULF BUILDING**

**PITTSBURGH 19, PENNSYLVANIA**

ATLANTA, GEORGIA
- J. M. Tull Metal & Supply Co., Inc.

BALTIMORE, MARYLAND
- Whitehead Metal Products Co., Inc.

BOSTON (Cambridge), MASSACHUSETTS
- Whitehead Metal Products Co., Inc.

BUFFALO, NEW YORK
- Brace-Mueller-Huntley, Inc.
- Whitehead Metal Products Co., Inc.

CHARLOTTE, NORTH CAROLINA
- Edgcomb Steel Company

CHICAGO, ILLINOIS
- Central Steel & Wire Company
- Steel Sales Corporation

CINCINNATI, OHIO
- Williams & Company, Inc.

CLEVELAND, OHIO
- Williams & Company, Inc.

COLUMBUS, OHIO
- Williams & Company, Inc.

DALLAS, TEXAS
- Metal Goods Corporation

DETROIT, MICHIGAN
- Steel Sales Corporation

HARRISON, NEW JERSEY
- Whitehead Metal Products Co., Inc.

HOUSTON, TEXAS
- Metal Goods Corporation

KANSAS CITY, NORTH, MISSOURI
- Metal Goods Corporation

LOS ANGELES, CALIFORNIA
- Ducommun Metals and Supply Co.
- Pacific Metals Company, Ltd.

MILFORD, CONN.
- Edgcomb Steel of New England, Inc.

NEW ORLEANS, LOUISIANA
- Metal Goods Corporation

NEW YORK, NEW YORK
- Whitehead Metal Products Co., Inc.

PHILADELPHIA, PENNSYLVANIA
- Edgcomb Steel Company
- Whitehead Metal Products Co., Inc.

PITTSBURGH, PENNSYLVANIA
- Williams & Company, Inc.

PORTLAND, OREGON
- Pacific Metal Company

ROCHESTER, NEW YORK
- Brace-Mueller-Huntley, Inc.

ST. LOUIS, MISSOURI
- Metal Goods Corporation

SAN FRANCISCO, CALIFORNIA
- Pacific Metals Company, Ltd.

SEATTLE, WASHINGTON
- Pacific Metal Company

SYRACUSE, NEW YORK
- Brace-Mueller-Huntley, Inc.
- Whitehead Metal Products Co., Inc.

TOLEDO, OHIO
- Williams & Company, Inc.

TULSA, OKLAHOMA
- Metal Goods Corporation

(*Continued from page* 198)

Mr. Blount, stressing the increased production and sales of Bakelite phenolic and styrene materials, pointed out the tremendous savings in costs of production by using plastics. "A typical example of such savings is the molding of a 35-pound Bakelite phenolic television cabinet in a single piece. This cabinet has excellent appearance and eliminates many costly production stages encountered in the production of a wooden cabinet, from the time the wood is cut until the finished cabinet is polished." Further use of plastics in producing large-size molded pieces, according to Mr. Blount, will take place in the furniture field. "One mold for a dresser drawer has already been built and other molds will be produced in the coming year."

Mr. Blount said that one of the fast growing uses of phenolic materials is in the waterproofing of paper. A corrugated paper carton coated with phenolic resins retains a large part of its strength, according to Mr. Blount, who also cited the increased use of phenolic materials for decorative laminates. Mr. Blount said the "decorative laminates field is moving at an unprecedented rate. There is currently more than eight times as much production in this field as in 1940."

Styrene molding plastic production, according to Mr. Blount, is also expected to continue at a high level. "During September of this year, the industry set an all-time sales record of 19,700,000 pounds of polystyrene. In addition, in the water type coatings field, styrene emulsions make possible more abrasive resistant water paints. Styrenated alkyds have also found use for coatings."

## PROPER MASKS FOR FIRE FIGHTING O.C.D. MASKS OF NO REAL VALUE

Due to new processes and materials, firemen are running into many gases not formerly encountered, says the National Board of Fire Underwriters in its Bulletin No. 282. There is no doubt wearing of a mask slows up a man — he can not do as much or work as fast as without one, but it is a lot better that he be able to work even at half of his usual efficiency than not be able to work at all. The principal need is training in wearing the mask. Men should be frequently drilled in wearing them, part of the time in gas or smoke filled rooms, and practice climbing stairs, raising and climbing ladders, handling hose lines, or carrying out other evolutions, all to give confidence in use of the masks.

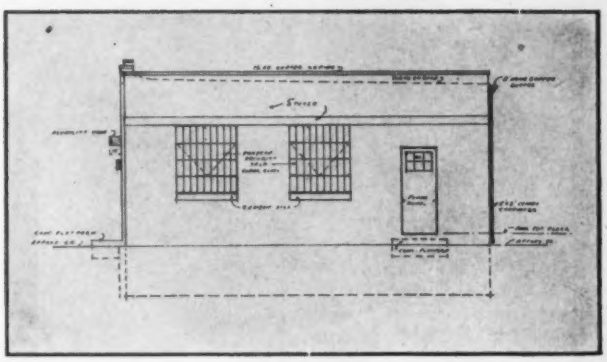
During and since the late war new masks have been developed and others improved. The three types of masks ordinarily used by fire departments are the filter, self-contained and hose or supplied air types. The self-contained type can be sub-divided into three classifications: The self-generating, the demand and the oxygen rebreathing types.

The most common task in use is the filter type, frequently known as the "all

(*Please turn to page* 202)




**with CONCRETE**
— the small extra first cost of test samples pays off in assurance of efficiency and durability of the finished structure.



**with TRACING CLOTH . . .**

*The small extra first cost of Arkwright Tracing Cloth, over that of tracing paper, repays many times over in the efficiency and durability of valuable drawings.*

Arkwright gives both immediate *and* future advantages. The expert work of the draftsman is made permanent. Your investment in time and money is backed by sharp, clean reproductive quality. Under repeated use — or on file for subsequent need — Arkwright assures perfect drawing performance year after year.

*For every drawing worth keeping for future use* — use permanent Arkwright instead of perishable tracing paper. Send now for generous samples and prove this superiority. Sold by leading drawing material dealers everywhere. Arkwright Finishing Company, Providence, R. I.

***The Big Six Reasons Why Arkwright Tracing Cloths Excel***

1. Erasures re-ink without feathering.
2. Prints are always sharp and clean.
3. Tracings never discolor or go brittle.
4. No surface oils, soaps or waxes to dry out.
5. No pinholes or thick threads.
6. Mechanical processing creates permanent transparency.




**ARKWRIGHT**
**TRACING CLOTHS**
**AMERICA'S STANDARD FOR OVER 25 YEARS**

## How much could you save with work gloves that wear 3 to 9 times longer?



We can show you records of many job tests, on a great number of applications, where workers wore out as many as 3 to 9 ordinary gloves on one hand *while wearing a single Edmont coated fabric glove on the other.*

**Make This Free Test:** Send brief description of your operation, materials handled and temperature conditions. We will forward, without cost, the type gloves we recommend, for on-the-job test and report. Address Edmont Mfg. Co., 540 Orange St., Coshocton, Ohio



**Edmont**
FABRIC-LINED
NEOX-COATED
**GLOVES**

All Edmont gloves are fabric lined, easy on and off, snag-proof. Liquid-proof and coated palm and thumb styles.

**NEOX** (neoprene and plastic) **Coated** for oils, grease, acids, caustics, solvents, degreasants, cutting, abrasion, heat.

**Natural Rubber Coated,** rough surfaced for sure grip, cutting, abrasion. Low cost.

**Plastic Coated** for oils, grease, acids, caustics, some solvents, all abrasion.





## STURDY— from top to bottom!




From reinforced insert-type spouts to electrically welded steel bottoms, Eagle's *Welded Steel Bench Oilers* are the most durable oilers available. The mechanics stand-by through years of service.

Tested under air pressure, they are made to stand unusual abuse and give satisfaction under severe conditions.

All spout lengths (4", 6", 7", 9") are interchangeable and fitted with knurled brass bushing. Available with flexible spouts, also. Capacities — ⅓, ½, ¾ and 1 pint.

*See your distributor or write*

**EAGLE MANUFACTURING COMPANY**
Dept. P35 Wellsburg, West Virginia



IF IT'S A FORGING

BILLINGS

*OUR HAMMERS TALK PRODUCTION!... OUR FORGING ENGINEERS KNOW FORGINGS!...*

WRITE OUR
FORGINGS DIV. Dept. SF-3
THE BILLINGS & SPENCER CO.
Hartford 1, Conn., U. S. A.


(*Continued from page* 201)

service type" or Bureau of Mines Type N. This is a device for filtering toxic gases and smoke but allowing the passage of oxygen and nitrogen to the wearer. Therefore, this mask cannot be worn where the oxygen content of the atmosphere has been reduced, by being replaced with gases or smoke, to below 16 per cent which is the minimum amount necessary to sustain life. However, in ordinary fires it is seldom the oxygen is reduced to dangerous levels; it could happen in an unventilated room or building, in a basement or in some other confined space. When the oxygen content at a fire is reduced to below 15 per cent smoldering combustion may continue, but most flames will be extinguished. Therefore, if at a smoky fire flames are visible, the use of filter type masks would normally be safe; but if active combustion is not apparent, the safe course would be to use self-contained or other breathing apparatus not dependent on the atmosphere near the fire to provide oxygen.

The filter type mask, as used by fire departments, gives adequate protection against ammonia in concentrations up to 3 per cent and other poisonous gases up to 2 per cent, which limitations are broad enough to cover the great majority of conditions encountered in every day fire fighting, but it must always be borne in mind that there are limits to the protection afforded by this type of mask. The advantages of it are its light weight (6 lbs.) and relatively compact design, the ease and speed with which it can be put on, the length of time it can be used.

The self-generating type mask consists of a canister that automatically generates oxygen, a breathing bag, a face piece and carrying harness. Because it generates its own oxygen, it is entirely independent of the outside atmosphere and can be worn regardless of how little oxygen is present or how high the concentration of poisonous gases. It is somewhat bulkier and heavier than the filter type and cannot be put in service as rapidly. The canister is rated for 45 minutes but may be used up to one hour under normal exertion, but if the canister is once used, even for a short time, it must be replaced. Care must be taken in the disposal of the used canisters which should be punctured and put in a pail of water to prevent them from coming in contact with any oil which could cause an explosion; the caustic solution that will be formed could cause burns, especially to eyes, and should be handled with care.

The demand type consists of a cylinder of compressed air or oxygen, necessary valves, face piece and carrying harness. Like the self-generating type, these can be worn safely under any atmospheric condition. Exhaled air or oxygen is vented to the surrounding atmosphere through an exhalation valve. Operating period should be at least 30 minutes. With this type of mask, it is essential that proper means be provided for recharging the cylinder.

The oxygen rebreathing type consists

(*Please turn to page* 204)

# NEW!






WELD GRINDING



CLEANING



CUTTING



FINISHING

# TRY SIMONDS ABRASIVE CO.

# FIBREX® RED WHEELS

TRADE MARK

For EXTRA LONG WHEEL LIFE, versatility, fast cutting, here's your answer . . . Fibrex Red Wheels. They're strong, tough durable for truly outstanding action in heading into welds, removing flash and bead and cleaning up rough ragged surfaces, especially on stainless steel.

Depressed Center Wheels (with adaptor) for all portable disc sanders and right angle grinders . . . straight wheels for cutting and all purpose grinding with regular equipment. Your choice of grain sizes . . . 16, 24, 36, 50 or 80. Send now for Bulletin ESA 186 giving full details on these new and amazingly versatile abrasive tools.

SIMONDS ABRASIVE COMPANY, PHILADELPHIA 37, PA. DISTRIBUTORS IN PRINCIPAL CITIES

DIVISION OF SIMONDS SAW AND STEEL CO., FITCHBURG, MASS. OTHER SIMONDS COMPANIES: SIMONDS STEEL MILLS, LOCKPORT, N.Y., SIMONDS CANADA SAW CO., LTD., MONTREAL, QUE. AND SIMONDS CANADA ABRASIVE CO., LTD., ARVIDA, QUE.

# Tie it tight...

## THAT MEANS GERRARD!

● There's no doubt about the *tightness* of a tie when you use Gerrard *Round* Steel Strapping. Millions of people who receive bundles tied by the Gerrard method can testify that Gerrard Steel Strapping keeps packages neat and firm, and their contents safe and secure. That's the kind of protection your packages should have.

In your plant, Gerrard Strapping will save you money. Gerrard Steel Strapping costs about 40% less than any other type of metal reinforcement. And the simplicity of Gerrard Steel Strapping procedures will speed up binding and packaging operations. Every Gerrard machine tensions the strapping, and forms its own twisted seal, trimmed smooth with no exposed ends.

The Gerrard Strapping method is equally adaptable to small parcel post packages and carload shipments of steel pipe and plate. Write for our free books, *Blue Book of Packaging* and *Q Model Semi-Automatic Bundling Machine.* Then consult a Gerrard engineer about your packaging problems. His services are available free of charge. **GERRARD STEEL STRAPPING COMPANY, 4713 South Richmond St., Chicago 32, Ill.**



1465 lb. palletized load of housings secured with four 10 ga. Gerrard Steel Straps. Because it's *round*, Gerrard Straps clinch tightly and evenly. Photo courtesy of International Harvester Co., Industrial Power Division.



Gerrard TE Machine on conveyor line. Machine is on suspension arm over plate that closes carton flaps. Operator quickly drapes strapping, then tensions, ties and cuts it in one machine-operation.



Model Q, semi-automatic . . . tensions, ties, cuts strapping and sets itself for the next tie . . . all in one operation. Bundling of shingles (above), cartons, newspapers and extra-sized packages proceeds rapidly.



Gerrard TA Machine quickly and easily secures a parcel post package. Many users report damage claims sharply reduced.




Production line operations move smoothly with Gerrard Steel Strapping. Perishable goods enjoy unrivaled safety from plant to destination.

**GERRARD**
**ROUND STEEL STRAPPING**
USS
**UNITED STATES STEEL**


(*Continued from page* 202)

of relatively small cylinders of oxygen, necessary regulating valves, a face piece, a breathing bag and chemicals to remove the carbon-dioxide from the exhaled breath. Utilization of oxygen from the exhaled breath permits a longer period of use from a small cylinder.

The other type used by some fire departments is the hose mask. This consists of a face piece, up to 150 feet of reinforced hose and a hand operated centrifugal blower. As long as the blower, which must be operated by an attendant, is in clean air the wearer is independent of the atmosphere surrounding him.

Each of the above types of masks are of value against smoke and toxic gases but are no protection against fire or heat; if it gets too hot to remain in a building without a mask it is too hot to stay with one. The demand and hose type masks can be used at shallow depths underwater but they were not designed for this purpose and should be so used only for extreme emergencies.

The O.C.D. masks which were distributed during the war for civilian defense are of no real value in fires as they do not filter out carbon monoxide; in fact they are apt to create a false sense of security. Fire departments in general, do not have them but sometimes other organizations, such as disaster units, still have a supply and might attempt to use them at fires.

Masks are no protection against gases that attack the skin, such as hydrocyanic acid gas, emphasizing the importance of firemen, especially officers, knowing something about the contents of buildings and what gases they may expect to encounter at a fire.

## NEW YORK WORLD SAMPLE SHOW TO OPEN IN 1950

The opening in New York City, early in 1950, of the New York World Sample show, was announced recently by Edward T. Dunne, director, 92 Liberty St., New York. Plans call for a permanent exhibit located in Midtown, New York City, organized to promote the increase of imports especially from ECA countries. Among the exhibit classifications are textiles, office equipment and supplies, building materials, and industrial, electrical and automotive equipment and components, and chemical and raw materials.

## NORGE DIVISION OF BORG-WARNER TO MOVE EXECUTIVE OFFICES TO CHICAGO

The Norge Division of the Borg-Warner Corporation will move its executive, administrative, sales, advertising and accounting departments, now located in Detroit, to Chicago during the summer of 1950, according to announcement by George P. F. Smith, Norge president. Large space on the second floor of the Merchandise Mart in Chicago has been leased.

(*Please turn to page* 206)



# mind if we blow someone else's horn?



SEYMOUR NICKEL SILVER skillfully used in the form of stampings, spun parts, milled and screw machine products, adds measurably to the quality of superb instruments like this. If quality is the keynote of your product, in your own interest, consider the use of

**SEYMOUR NICKEL SILVER**

Write for catalog.

**THE SEYMOUR MANUFACTURING COMPANY**

SEYMOUR, CONNECTICUT

# Confidence

4 CYCLE
BRIGGS & STRATTON
GASOLINE ENGINES

**You buy with confidence because you know machines, tools, appliances and equipment are "Powered Right" when they are powered by Briggs & Stratton.**

The Briggs & Stratton trademark is your assurance of maximum efficiency, dependable service, and long life. Insist on Briggs & Stratton 4-cycle, single-cylinder air-cooled engines to power your equipment.

BRIGGS & STRATTON CORPORATION
Milwaukee 1, Wisconsin, U.S.A.





## STUDY OF MARKETS PAVES WAY FOR WORTHWHILE SAVINGS

In studying price trends of the commodities market, it is often possible to effect savings by contacting departments without waiting for the requisition to arrive at the Purchasing Department, states Roland M. Brennan, Purchasing Officer, District of Columbia, Washington, D. C., in his annual report to the Board of Commissioners. Cotton yarn is cited as an example. When it appeared to Purchasing that the cotton yarn market had reached a weak stage, invitations to bid on requirements of the Industrial Division of the Department of Correction, were widely circulated, with the result that on this one item, through timely purchasing, there was a saving of 12¢ a pound on 10,000 pounds, or $1,200. Shortly thereafter prices advanced.

On August 30th of this year, the Commissioners authorized the purchasing officer to enter into supply contracts not exceeding $3,000 in valuation. Mr. Brennan reports that the brief experience had with the increased authority fully justifies its being put into effect.

Total value of purchases during the fiscal year ended June 30, 1949 amounted to $10,732,044, an increase of $1,841,288 over the previous fiscal year. The increase is due principally to greater volume and diversification of requirements. Prices on foods, textiles, nonferrous metals, building materials, principally lumber, vegetable oils, paint materials, paper, pulp and chemicals showed declines, while steel, motor vehicles, coal, hides and leather and construction machinery maintained their price strength and in some cases were higher. The report states that a marked improvement in competition for District business occurred during the year; at some public bid openings as many as 25 bids were received on one commodity. A pronounced buyers' market exists in every commodity field, and competition is becoming keener every day, the report continues.

By taking advantage of discounts offered by vendors during the year, the District realized $37,212.64, an increase of $8,354.57 as compared with the previous year. Bidders who did not allow cash discounts for payment within ten to thirty days, a year or so ago, are now doing so. Solicitation of bids and negotiated contracts and contractural services, accounted for 56.6% of the total expenditures.

The report states that it was fact that the use of an escalator clause geared downward would be opposed by bidders, but such was not the case, and had absolutely no adverse effect on competition. However, price reduction clauses in supply contracts have no place in a rising market, nor is a "hand to mouth" buying policy advisable in those markets showing progressive price strength. Market studies are required constantly to aid decision as to when and how much to buy.

(*Please turn to page* 208)



**WINTER TROUBLE SHOOTING** is rough and rugged for the telephone man who maintains the wires that carry your voice. The electric current that flows through millions of miles of telephone lines is safeguarded by Exide Batteries.



**CREW ON SINKING SHIP** saved through radio SOS. Storage batteries are essential equipment in the operation of ship radios and other electronic safeguards. Many Exide Batteries are used in these and other marine services.



**HOME ON WHEELS,** with every convenience to make travel comfortable and enjoyable, including abundant light and air-conditioning. On many passenger cars, Exide Batteries help supply current for these services.



**MORE COAL** per man because of fast, flexible shuttle cars, now extensively used in modern mines. Many of these haulage units, together with large numbers of mine locomotives and trammers, are powered by Exide Batteries.

Directly or indirectly, the widespread use of Exide Batteries benefits you and your business in many ways, for *there are Exides for every storage battery need.* In industry, Exide Batteries supply motive power for battery-electric materials-handling trucks, mine locomotives and shuttle cars. Railroads use vast numbers of Exides for car lighting, air-conditioning, Diesel locomotive cranking, signal systems.

Exides are used in telephone, telegraph, radio and television service . . . in aircraft, ocean vessels, central stations. They supply cranking power for husky off-the-highway equipment, and current for emergency lighting in buildings of every kind. And on millions of cars, trucks and buses, they prove daily that "When it's an Exide, you start."

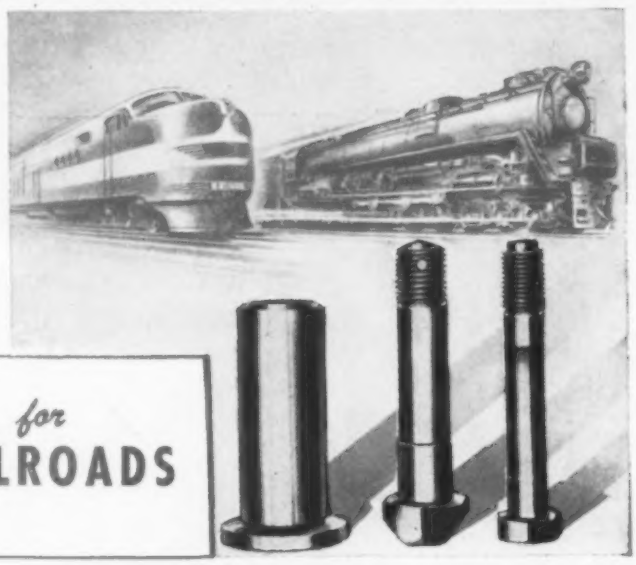
Information regarding the application of storage batteries for any business or industrial need is available upon request.

THE ELECTRIC STORAGE BATTERY CO.
Philadelphia 32
*Exide Batteries of Canada, Limited, Toronto*

**Exide*** **BATTERIES HAVE PROVED THEIR DEPENDABILITY IN VITAL SERVICES FOR 62 YEARS.** **Reg. Trade-mark U.S. Pat. Off.*

# ERIE SPECIAL BOLTING FOR HEAVY MACHINERY

FOR over 30 years ERIE has specialized in the manufacture of *high quality bolting*. We use the very latest equipment for heat treating, machining, grinding and threading. We are certain that we can produce better bolting at a saving to you because we are specialists — send us your bolting specification for our estimate.



*for* RAILROADS



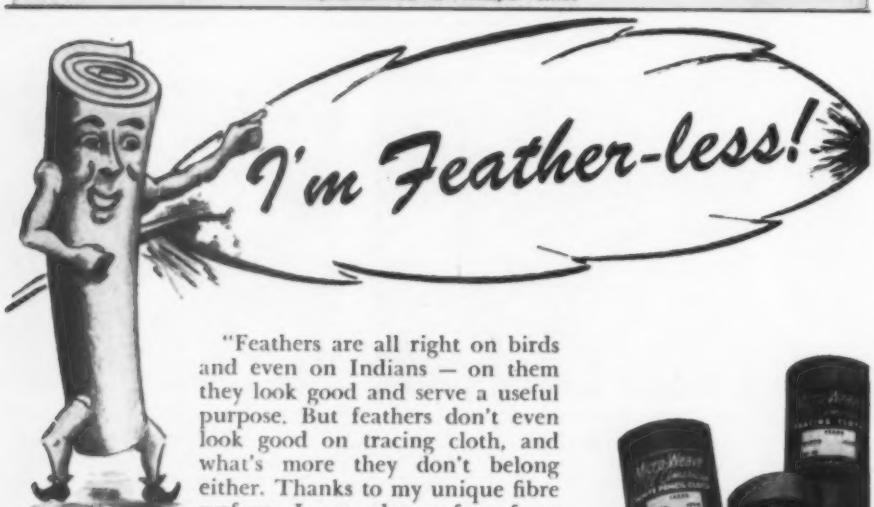
*A DEPENDABLE SOURCE OF HIGH QUALITY BOLTING FOR RAILROADS, REFINERIES, DIESELS, FARM MACHINERY, EXCAVATING EQUIPMENT AND ALL TYPES OF HEAVY MACHINERY.*

ERIE BOLT & NUT CO.
ERIE, PA.

A SUBSIDIARY OF Barium STEEL CORPORATION Steelwright to the Nation

STUDS • BOLTS • NUTS ~ ~ ALLOYS • STAINLESS • CARBON • BRONZE
Representation in Principal Cities






"Feathers are all right on birds and even on Indians — on them they look good and serve a useful purpose. But feathers don't even look good on tracing cloth, and what's more they don't belong either. Thanks to my unique fibre surface, I am always free from feathers despite repeated erasures. Yes, sir, work is faster and cleaner when you're working on MICRO-WEAVE."

MICRO-WEAVE exceeds all specifications in minute perfection of weave — in transparency — in better blueprints — in longer life. Test MICRO-WEAVE on your drawing board. Send for generous sample.




THE HOLLISTON MILLS, INC.
NORWOOD, MASS.
NEW YORK PHILADELPHIA CHICAGO

★ MICRO-WEAVE is backed by Holliston's 50 years of leadership and experience in developing special cloths for industry.


(*Continued from page* 206)

As to the future prices of commodities, the report states: "It is believed that price readjustments have not run the full course and that manufacturers are awaiting final settlement of pending wage negotiations in steel and other industries."

Among the major items of purchase were acids, chemicals and drugs, books, dry goods, electric apparatus and electric cable and wire, food, fuel, furniture, hospital, laboratory and surgical apparatus, precision instruments, machinery and equipment, motor vehicles, office equipment, pipe, tubes, fitting, pumps, stationary, and textile clothing.

## INTERNATIONAL TRADE FAIR CHICAGO ONLY IN 1950

Postponement of the Detroit International Trade Fair to 1951 leaves Chicago as the sole U. S. city to offer American and foreign manufacturers exhibition space in the First U. S. International Trade Fair in 1950. Exhibits are to be housed on Navy Pier, The International Ampitheatre, the Coliseum, and the Chicago Arena. Theme of the Fair is "World Trade—World Prosperity—World Peace". About 70% of the exhibit space is being reserved for foreign exhibitors and the remainder will be given over to Americans.

Fair officials have established 29 commodity groupings in the consumer goods division, and the division of industrial supplies and equipment. The latter will include: office equipment and furniture; building materials; plumbing; heating and air conditioning; electrical goods; machine tools and metal-working equipment; special machinery; general machinery; metals and alloys; scientific instruments; chemicals, store equipment; hotel and restaurant supplies; transportation equipment; and aviation equipment.

## NEW COMPANY TO MARKET TITANIUM METAL AND ALLOYS

National Lead Company and Allegheny Ludlum Steel Corporation have announced the formation of Titanium Metals Corporation of America, a new jointly owned organization which will market and distribute titanium metal, its alloys and various related products. The new company will make its headquarters in New York, N. Y.

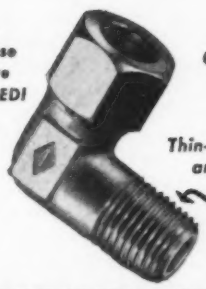
National Lead Company laboratories have been producing and studying titanium metal for many years and new facilities for output on a larger scale recently commenced production at the Sayresville, N. J., plant.

Allegheny Ludlum, has been conducting intensive research into melting, alloying and processing of the new metal. It is now producing limited quantities of titanium metal forgings, bar, sheet, strip and wire for distribution to industry.

(*Please turn to page* 210)

# In Tube Fittings, Valves and Tubing Tools the IMPERIAL LINE is the COMPLETE LINE

## FITTINGS

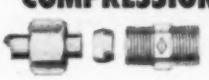


*Finer because they're FORGED!*

*For Connecting Copper, Brass, Aluminum Thin-Wall Steel and Flexible Tubing.*

*Extra Length Pipe Threads*

### COMPRESSION FITTINGS



Simple, efficient, easy to assemble.

### FLARED TUBE FITTINGS



For low, medium, high pressure work. Gives repeated tight reconnection.

### HI-DUTY FITTINGS



Available in Brass or Aluminum. Easier to assemble. Withstands vibration.

### FLEX FITTINGS



Has flexible synthetic sleeve. Withstands major vibration, minor tube movement.

### INVERTED FLARED TUBE



Similar to flared tube fitting except seat for flare is inside body.

### FLEXIBLE HOSE and FITTINGS



For making up flexible liquid, air and vacuum lines.

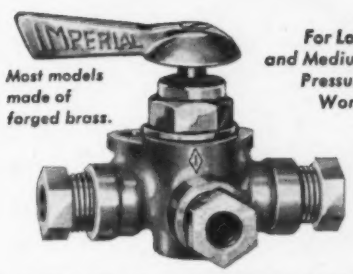
### BRASS PIPE FITTINGS



Most shapes now forged for greater strength.

**SHAPES and SIZES** Elbows, tees, crosses, straight fittings. Std. sizes ⅛" to ¾" O.D. tubing. Pipe thread ends ⅛" to ½" P.T.

## VALVES




*Most models made of forged brass.*

*For Low and Medium Pressure Work.*

### 2-WAY HI-DUTY VALVES



An extra sturdy valve for liquids and gases. Note solid bottom.

### 3-WAY AND 4-WAY HI-DUTY



Outstanding shut-off or distributing valve for liquids, gases.

### 2-WAY SHUT-OFF VALVES



General purpose plug valves for a host of applications.

### 3-WAY SHUT-OFF VALVES



For liquid and air lines or wherever two fuel tanks are used.

### SHUT-OFF NEEDLE VALVES



Popular low cost valves. Compression, flare and pipe thread connections.

### DRAIN COCKS



Plug and needle types. Variety of styles. Positive shut-off, smooth operation.

**VALVE SIZES** ⅛" to ½" O.D., ⅛" to ¾" P.T.

## TUBE WORKING TOOLS



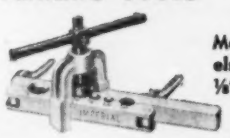

*a tool for every job —every tool a leader.*

### TUBE CUTTERS



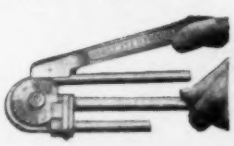
Various sizes. Make clean right angle cuts on tubing ⅛" to 2¼" O.D.

### FLARING TOOLS



Many excellent models to flare tubing ⅛" to 1" O.D.

### TUBE BENDERS



Hand benders of open-side, heavy-duty and spring types. Sizes ⅛" to ¾" O.D.

### OTHER TUBING TOOLS

in the complete Imperial line include reamers, swedging, pinch-off and refacing tools and soldering torches.

*See Your Industrial Supply House*

Illustrated here are only a few representative products in the complete Imperial Line which is described in Catalog No. 350. Ask for your copy.

**THE IMPERIAL BRASS MFG. CO.,** 512 S. Racine Ave., Chicago 7, Ill.

**IMPERIAL** PIONEERS IN TUBE FITTINGS AND TUBE-WORKING TOOLS

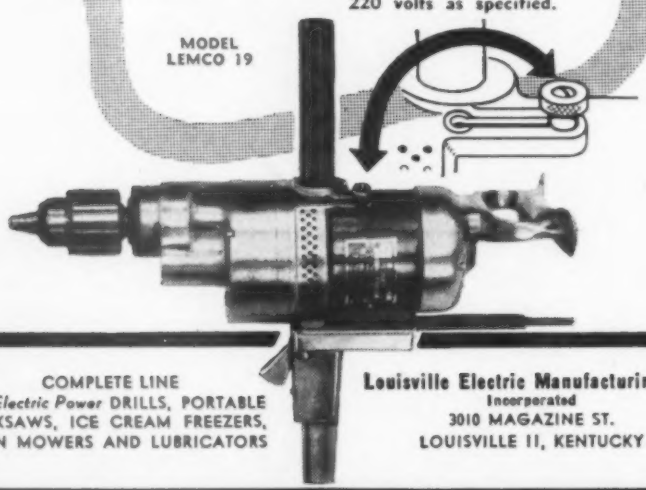
PIONEER TRADE MARK

THE DRILL *with the* GEAR SHIFT

TWO SPEEDS . . . Power for the tough job . . . Speed for the light job . . . Just shift the gear . . .

This PIONEER heavy duty drill is FULL BALL BEARING, with a universal motor operating on either AC or DC and can be wound for 32-110 or 220 volts as specified.

MODEL LEMCO 19



COMPLETE LINE OF *Electric Power* DRILLS, PORTABLE HACKSAWS, ICE CREAM FREEZERS, LAWN MOWERS AND LUBRICATORS

Louisville Electric Manufacturing Co.
Incorporated
3010 MAGAZINE ST.
LOUISVILLE 11, KENTUCKY




## MEASURING THE IMPACT OF FOREIGN CURRENCY DEVALUATION

Attention has centered upon how much the recent currency devaluations by Great Britain and other nations may help those countries' exports, but a more important question is whether devaluation will lead to greater currency convertibility, according to the research department of the National Association of Manufacturers, New York, N. Y.

Eventual results of the move will be decided largely by domestic fiscal and economic policies of the devaluing nations, it was emphasized.

In a study on devaluation, prepared by Erik T. H. Kjellstrom, associate director of research of the NAM, it was pointed out that with only minor exceptions, the foreign exchange control systems are being maintained, and in this respect the devaluations have not as yet eased the flow of trade markedly.

The study said that because the devaluations were "drastic" black market transactions virtually have been eliminated. Therefore, it explained, the central banks were put in a far better position to exercise control over a nation's foreign exchange holdings—which should tend to strengthen the reserve positions of these banks and "thereby better the opportunities for free currency convertibility."

However, free convertibility requires more than that, continued the study; it requires that costs and prices are allowed to be established by competitive forces, which in turn "implies that the quota system, and import and export licensing, are eliminated."

"Devaluation is a long step toward this goal, as it will tend to increase competition on the international markets," the NAM report said. "But this effect of the devaluations may readily be offset if the inflationary pressures on the domestic markets, caused by the devaluation, are allowed to assert themselves.

"It is for this reason that the domestic fiscal and financial policies are so important. If further government restrictions and regulations become necessary as a result of devaluation, then of course the difficulties of achieving free currency convertibility are increased."

The principal observations made in the study follow:

1. The economic effects of the recent devaluations cannot be measured mathematically.

2. The devaluations are likely to increase the volume of international trade.

3. The new "sterling-dollar rate," which has formed the basis of other currency changes, was realistic for two reasons: (a) it corresponded to free market evaluations; (b) it increased the possibility of accumulating foreign exchange in central banks by making black market operations less profitable than they have been.

4. United States exports may not be seriously affected, because of the existing and potential demand for our products

(*Please turn to page* 212)

# for PROOF that General Boxes CUT COSTS . . . let's CHECK THE RECORD

**No. 7105**

Gross Shipping Weight
Old Package ..... 410 lbs.
* New Package ..... 364 lbs.
Weight Saving ..... 46 lbs.

**No. 7038**

Gross Shipping Weight
Old Package ..... 120 lbs.
*New Package ..... 104 lbs.
Weight Saving ..... 16 lbs.

**No. 7023**

Gross Shipping Weight
Old Package ..... 39 lbs.
* New Package ..... 34 lbs.
Weight Saving ..... 5 lbs.

**No. 7147**

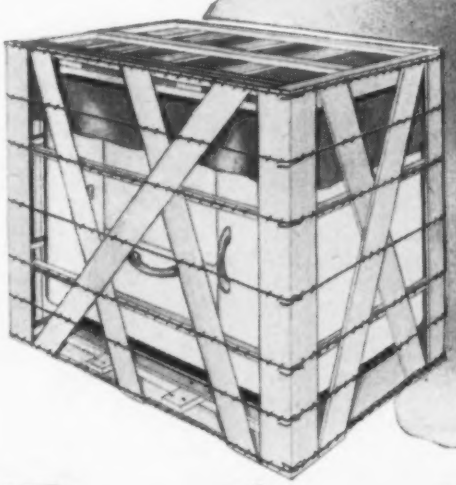
Gross Shipping Weight
Old Package ..... 95 lbs.
* New Package ..... 83 lbs.
Weight Saving ..... 12 lbs.

## General Engineered CONTAINERS PROVIDE AVERAGE SAVING OF 19.75 LBS.

Here's *concrete evidence* of savings! 4 widely diversified products from the case history files of our Designing and Testing Laboratories show an average weight saving of 19.75 lbs. Many of the hundreds of case histories on file show even greater weight savings!

Better check today on this vital subject. We'll be glad to help design a more efficient container for your product.

*See us at the A. M. A. Packaging Show, Chicago, April 24-27.*



* "New Packages" were designed in our DESIGNING and TESTING LABORATORIES

General ★★★★★

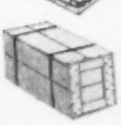
**BOX COMPANY**

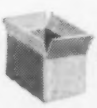
*engineered shipping containers*

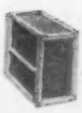
**GENERAL OFFICES:**
48 W. Illinois Street, Chicago 10, Ill.

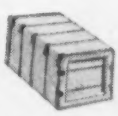
**DISTRICT OFFICES AND PLANTS:** Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Meridian, Miss., Milwaukee, Sheboygan, Winchendon. Continental Box Company, Inc.: Houston, Dallas.

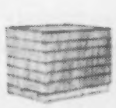

General Wirebound Crate


General Nailed Box


General Corrugated Box


General Cleated Corrugated Container


General All-Bound Box


Generalift Pallet and Pallet Box


General Watkins-Type Box





(*Continued from page 210*)

abroad and our ability to lower unit costs of production.

5. Cost of production in the devaluing countries may increase, but the likelihood is that such increases will be less, relatively, than the percentage changes caused by devaluation. However, if such increases occur, they may invite additional government regulations.

6. The devaluations will not lead to free convertibility of currencies as long as foreign trade restrictions and export and import controls remain.

7. Imports to the United States are likely to depend more on foreigners' sales efforts and our own consumers' choice, than on price.

"The impact of devaluation," the study said, "should not be analyzed in terms of export possibilities merely, but rather in terms of greater opportunities for currency convertibility. If this is not achieved, little has been gained by the 'drastic' devaluations."

A number of factors indicate that the volume of exports and imports may be affected less, relatively, than indicated by the devaluation percentages, the NAM study found.

Production-cost increases may offset, wholly or partially, the sales-price gains, it pointed out. High import prices from "dollar areas" may tend to shift some purchases to less "expensive" countries, the study continued, and in the case of the United States, the volume of imports of goods from countries that have devalued is likely to be influenced more by consumer choice and sales efforts than by currency depreciation.

This is especially so, the report added, because "customs duties, transportation costs and insurance charges continue to play a vital role in the prices the American consumer has to pay."

The study noted that a substantial percentage of our exports is now paid for by American taxpayers. When this aid ends, it said, "the export volume automatically will decline, unless foreign nations can earn dollars or private American foreign investments are made—or both."

* * *

## NEW GF SHELVING ACCESSORIES ANNOUNCED

Several new shelving accessories just been announced by The General Fireproofing Company of Youngstown, Ohio, include pipe brackets, bumper posts, bumper plates, sloped box shelves, sloped boxes, snap-on label holders, and gusset sway braces. A few of these are pictured here.

*Pipe brackets* are made of 3/16" x 7/8" bar and will take standard ½" pipe. Their use permits the stock man to reach materials on the top shelves more easily. The grab irons pictured at the top are used above the pipe climbing rails. Long shelving bolts are supplied with the bracket to lock the pipe in place front to rear. Pipe brackets can also be

(*Please turn to page 214*)

# PRECISION GRINDING ELIMINATES SCRAPING

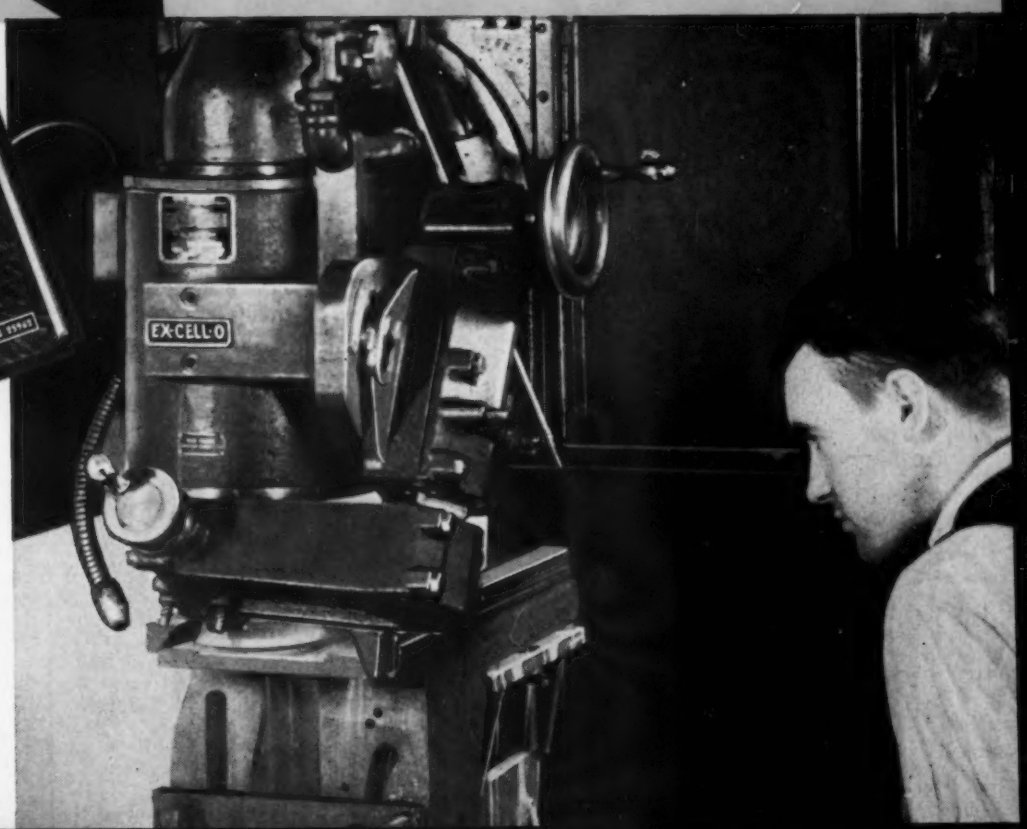
## Ex-Cell-O Spindle Finishes Dovetail Ways in 1/10 the Time Formerly Required

Actual case histories show that slide ways now being precision ground in 15 minutes formerly required 2½ to 3 hours of hand scraping to obtain satisfactory bearing. Slightly larger slides that are now precision ground in 20 minutes formerly required 3 to 4 hours of hand scraping.

Ex-Cell-O spindle engineers have a wealth of experience in designing precision spindles to meet special applications. If you don't find a spindle to suit your needs in the spindle catalog, write to Ex-Cell-O stating the operation to be performed and your requirements in terms of speed, horsepower and preferred driving method. A simple sketch showing some basic dimensions is helpful, too.

XLO
EX-CELL-O for PRECISION




If you would like an Ex-Cell-O Precision Grinding Spindle Catalog without obligation, just write on your company letterhead, asking for Catalog Number 25962.

50-22

**EX-CELL-O CORPORATION** DETROIT 32 MICHIGAN

MANUFACTURERS OF PRECISION MACHINE TOOLS • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS
DRILL JIG BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT




# ASK US TO QUOTE ON Name Plates

Send us your designs and specifications. Or, if you wish, our Art Department is available to help in preparing distinctive name plates for your products. We will gladly quote on your requirements, without obligation. Etched or lithographed on metal, Ecoa name plates are *permanent marks of distinction* which reflect quality and add sales appeal to your product. They look better—longer.




**THIS BOOK CAN SAVE YOU MONEY**

By choosing from nearly 5000 shapes and sizes for which we have dies on hand you can save the cost of special dies. Your design and engineering departments will get real money-saving ideas from this book. Write for your copy now on your letterhead.

**ETCHING COMPANY OF AMERICA**

1520 Montana St., Chicago 14, Ill., Dept. C-3

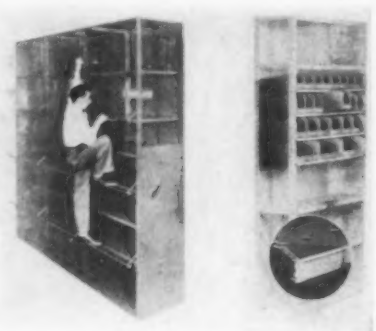
Metal Name Plates, Dials and Panels, Etched or Lithographed • Etched Metal Scales, Clock Dials, Trophy Plates, Plaques, Art Novelties, Advertising Specialties • Etched Metal Panels for elevator and architectural uses • Lithographed or Screened Plastic Name Plates or Dials.

SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

(*Continued from page 212*)

used to make a pipe handle on shelving trucks.

*Sloped boxes* fit on sloped box shelves and permit the storage of many small parts. The front of these products are 1⅜" high, so parts may be removed without withdrawing the boxes. The slope permits filling each box to capacity.



1. On the left are the *brackets* for the pipe climbing rails. On the upper right are the *sloped boxes*. Below that is the new *snap-on label holder*

*Snap-on label holders* are made to take labels 1-3/16" high by 3½" long. The lug engages a divided hole in the shelf, and when snapped downward into position, is securely locked in place. If necessary to reposition, snap-on holders may be moved easily.

*Bumper posts* are used over corner posts of racks to protect the regular posts from bumps by power or hand trucks, dollies, or other abuse. Bumper plates fit over the outside of bumper posts and protect the side sheets at the end of racks.

*Gusset sway braces* are used on skeleton type racks to assure rigidity and give additional support to shelves. They are much stronger than angle sway braces, and can be attached easily without engaging the bolts that hold the shelves. They are furnished in right and left hand because of the offset that fits along the bottom of the shelf flange.

## INDIANA SUPPLY SOURCES

The Indiana Industrial Directory has been published by the Indiana State Chamber of Commerce, Indianapolis, Ind. It contains 300 pages, lists 700 cities, towns and communities in the state, and gives detailed information about 10,000 industries, and businesses, including personnel. It also gives air, automobile and railroad routes, truck terminals, etc. The price of the directory is $10.00.

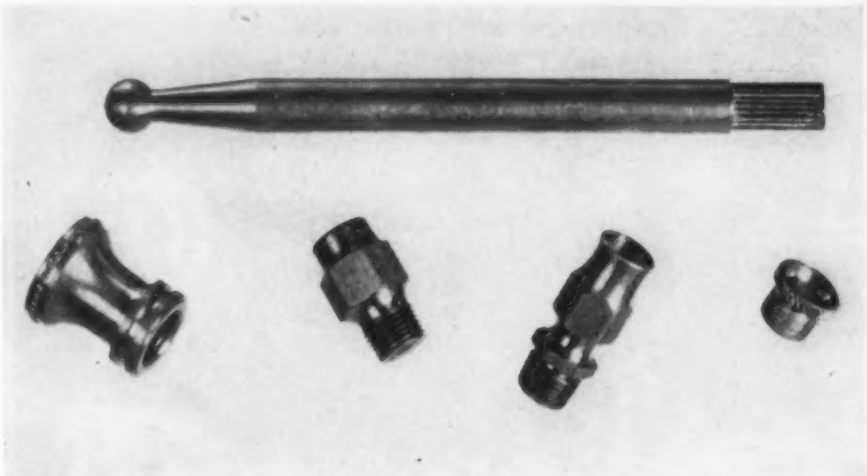
## WELDER EXCHANGE PARTS PLAN ANNOUNCED BY LINCOLN

Establishment of a welder parts exchange plan is announced by the Lincoln Electric Co., Cleveland 1, Ohio. Old parts may be traded in for factory wound stators, armatures and certain control parts. The service is available through authorized Field Service Shops.

# COPPER ALLOY BULLETIN

REPORTING NEWS AND TECHNICAL DEVELOPMENTS OF COPPER AND COPPER-BASE ALLOYS

*Prepared Each Month by BRIDGEPORT BRASS COMPANY "Bridgeport" Headquarters for BRASS, BRONZE and COPPER*



Screw machine items illustrating knurling and roll threading operations. Courtesy, Seymour Brass Turnings Company.

## Free Machining Brass Rod Suitable For Roll Threading

Roll threading and knurling in the primary screw machine operation have done much to reduce the cost on thousands of precision and ornamental parts.

To keep pace with this trend, it has been necessary for the brass fabricator to carefully control temper to give free machining rod sufficient ductility to permit cold deformation of this type and at the same time maintain the highest machinability rating.

Bridgeport's Ledrite 6, free turning brass rod, was used for the parts shown in the accompanying photograph. These parts were made by Seymour Brass Turnings Company, Seymour, Conn., and are good examples of straight, diamond and bead knurling as well as thread rolling.

**Stop Supports Long Piece**

The long part at the top is an automobile mirror swivel arm. It is five inches long and 3/8" in diameter. The stock is fed out in a #2 Brown & Sharpe about 1", box turned, straight knurled and drilled from the turret. It is fed out again to a turret stop which takes the knurled diameter and rests against the turned shoulder to give support for the ball forming operation and cutoff. The work is turned at around 350 feet per minute and the feed is 0.0015" per revolution.

The two air-vent valves for heating systems are made from hex rod. Besides deep drilling and multiple forming, the threads are rolled in the screw machine and are 3/8" pipe. No difficulty is encountered in using the free machining Ledrite 6 Brass rod. The cord bushing has a diamond knurl and the threads are rolled. The knurl on the lamp finial has a ball knurl which is produced by actual deformation under pressure of the knurling tool. A narrow ridge is turned by the forming tool on the large end for knurling. The material shows no signs of cracking or splitting.

**Temper Controlled**

In sizes from 3/8" up, the temper of this rod stock is kept low enough to permit knurling and maintain free machining of its properties. If there is no knurling or roll threading involved, Bridgeport can supply rod in a higher temper. Screw machine fabricators, however, report little or no difference in the machining characteristics of the two rods despite the difference in temper.

In rod sizes below 3/8", Bridgeport rod is slightly harder in temper to insure against bending and buckling during machining. When using sizes below 3/8" if any difficulty is encountered in roll threading or knurling, it may be necessary to change to a softer temper or switch to another alloy which is more ductile such as Ledrite 2, which contains slightly less lead with the copper increased correspondingly. This alloy is also useful where exceptionally accurate knurls and rolled threads are demanded as in the precision instrument field. But for the majority of cases the standard free cutting brass rod is very satisfactory.

When selecting alloys, especially where intricate forming, roll threading or knurling is involved, Bridgeport's Laboratory should be consulted. Also make use of its valuable experience to help you solve other metal problems such as improving products or reducing costs.

**BRASS • BRONZE • COPPER • DURONZE — STRIP • ROD • WIRE • TUBING**

MILLS IN
BRIDGEPORT, CONNECTICUT
INDIANAPOLIS, INDIANA

*In Canada:*
*Noranda Copper and Brass Limited, Montreal*




BRIDGEPORT BRASS COMPANY
BRIDGEPORT 2, CONNECTICUT
*Established 1865*
"Bridgeport" *District Offices and Warehouses in Principal Cities*




# bring your layouts to life: print on

## INTERNATIONAL *Ti-opake*

Where it's a rush job, and it's got to be good—specify International Ti-Opake.

It's quick-drying and so opaque it cuts show-through to the minimum. Smooth finish for folders, broadsides and catalogs printed by letterpress or offset.

For announcements, prospectuses, stationery—vellum finish with matching envelopes, equally good for printing and writing. International Paper Company, 220 East 42nd Street, New York 17, N. Y.

**INTERNATIONAL PAPERS**
*for Printing and Converting*



*Want Additional Product Information? See Page 19.*

PRODUCTION EXECUTIVE

# Office Equipment and Supplies

## Analysis of Purchase Commitments Report

*J. C. Andrews, Purchasing Agent, The American Hardware Corp., New Britain, Conn., furnished the accompanying forms, which also include Commodity and Price Record, Materials Control Stock Record and Secondary Record, Returned Goods Shipping Order, Invoice Approval Slip and varied other forms.*



THE AMERICAN HARDWARE CORP.

New Britain, Connecticut

To 19 No. A_____

PLEASE FURNISH THE FOLLOWING
SUBJECT TO THE CONDITIONS NOTED BELOW
MARK INVOICE AND PACKAGES WITH THE ORDER NUMBER
SIGNED BILL OF LADING MUST ACCOMPANY EACH INVOICE
MAIL INVOICE IN DUPLICATE PROMPTLY.

QUANTITY | ARTICLE

IN ADDITION TO ABOVE INSTRUCTIONS MARK ALL CASES, PACKAGES, Etc.

DELIVER TO _____ RECEIVING DEPT.

SHIP CHEAPEST WAY UNLESS OTHERWISE INSTRUCTED

ALL MATERIALS ORDERED ABOVE ARE SUBJECT TO OUR APPROVAL

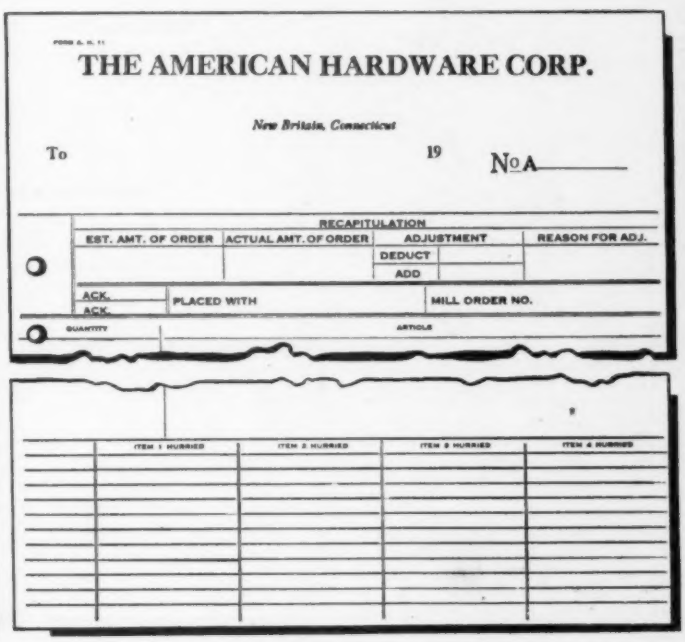
PLEASE OBSERVE

1. Address all correspondence relative to this order to The American Hardware Corporation-Purchasing Department.
2. Acknowledge receipt and state when shipment will be made.
3. An order must not be filled at a price higher than last quoted without advising us.
4. All materials rejected will be returned at price billed us plus all charges, and must not be replaced unless a new order is sent to you for same.
5. This Corporation will not be responsible for the payment of any bills for materials furnished unless delivery is made in STRICT COMPLIANCE WITH OUR ORDER.
6. No bill for materials furnished will be entertained unless based on this regular form or order.
7. Separate statement of account showing charges to each Division must be mailed promptly at close of each month, direct to the Division.

BILL FEDERAL EXCISE TAXES AS A SEPARATE ITEM.

THE AMERICAN HARDWARE CORP.

ASST. PURCHASING AGENT



THE AMERICAN HARDWARE CORP.

New Britain, Connecticut

To 19 No. A_____

| RECAPITULATION | | | |
|---|---|---|---|
| EST. AMT. OF ORDER | ACTUAL AMT. OF ORDER | ADJUSTMENT | REASON FOR ADJ. |
| | | DEDUCT | |
| | | ADD | |

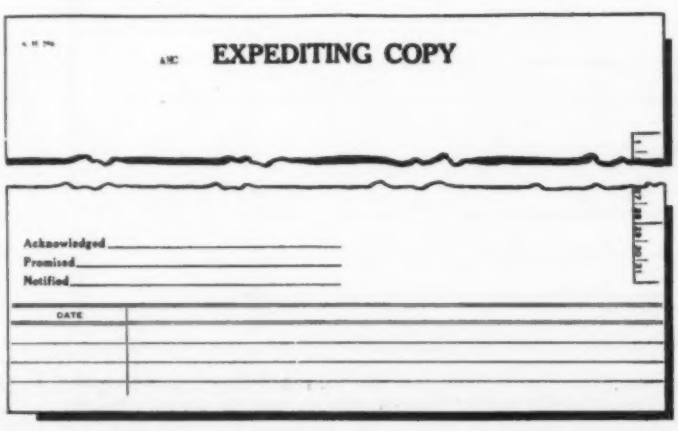
ACK. _____ PLACED WITH _____ MILL ORDER NO.
ACK. _____

QUANTITY | ARTICLE

| ITEM 1 HURRIED | ITEM 2 HURRIED | ITEM 3 HURRIED | ITEM 4 HURRIED |
|---|---|---|---|
| | | | |

*Formal purchase order. The Corporation has four plants and the letter prefix before the order number is the division identification. "A" indicates the executive order and delivery. The purchase order also bears the rubber-stamp imprint—"Do Not Exceed Normal Over-Shipment on Our Orders." Form is printed on letter-size sheet.*

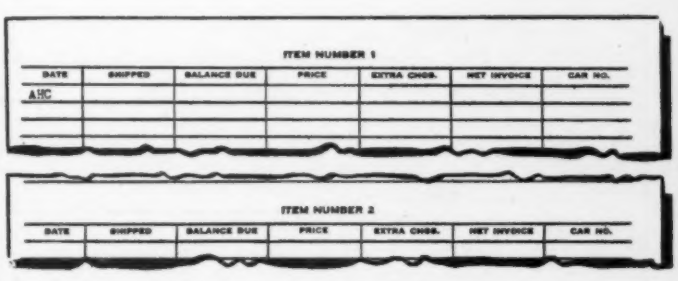
*Form above is Purchasing Department Copy which is placed in books for posting. Lower section provides expediting record, and reverse side carries receiving and invoice record.*



A.H.C. **EXPEDITING COPY**

Acknowledged _____
Promised _____
Notified _____

| DATE | |
|---|---|
| | |
| | |
| | |
| | |



ITEM NUMBER 1

| DATE | SHIPPED | BALANCE DUE | PRICE | EXTRA CHGS. | NET INVOICE | CAR NO. |
|---|---|---|---|---|---|---|
| A.H.C. | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

ITEM NUMBER 2

| DATE | SHIPPED | BALANCE DUE | PRICE | EXTRA CHGS. | NET INVOICE | CAR NO. |
|---|---|---|---|---|---|---|
| | | | | | | |

*Above: Record form on reverse side of Purchasing Department copy of purchase order. Left: Expediting copy of purchase order.*

Order FROM

**PURCHASE REQUISITION**
**THE**
**AMERICAN HARDWARE CORPORATION**
PURCHASING AGENT DISREGARD

Req. No. **Nº 3201**
Dept. Req. No.
Dept.
Date

| AMT. WANTED | ARTICLE | ON ORDER | ON HAND |
|---|---|---|---|
| | | | |

INVENTORY ON HAND | TOTAL | AMOUNT ON ORDER

Checked By | Approved By

*The Purchase Requisition is 8" x 5". It carries a three-section rubber stamp for inventory control under the following headings: "Inventory on Hand"; "Consumption, Total Past 3 Mo."; and "Amount on Order."*

*Stock Record Card which serves for some commodities for which the Visi Record card (next page) is not used. Size 8" x 5".*

AMERICAN HARDWARE CO., NEW BRITAIN, CONN.

MATERIAL | 17016-8 | YEAR | CARD NO.

| ORDER NO. | QUANTITY | COST | ORDER NO. | QUANTITY | COST | ORDER NO. | QUANTITY | COST |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

SHIPPER | UNIT | TERMS

**ANALYSIS OF PURCHASE COMMITMENTS**

| | C | E | S | L | A | TOTAL |
|---|---|---|---|---|---|---|
| **BALANCE OF OUTSTANDING COMMITMENTS AS OF** | | | | | | |
| Revenue Expenditures: | | | | | | |
| Raw material and parts | $ | $ | $ | $ | $ | $ |
| Supplies | | | | | | |
| Repairs | | | | | | |
| Advertising and catalogue | | | | | | |
| Other expense | | | | | | |
| Sub-total | $ | $ | $ | $ | $ | $ |
| Capital Expenditures: | | | | | | |
| Machinery and equipment | | | | | | |
| Dies, tools, fixtures & patterns | | | | | | |
| Office equipment | | | | | | |
| Other capital expenditures | | | | | | |
| Sub-total | $ | $ | $ | $ | $ | $ |
| GRAND TOTAL | $ | $ | $ | $ | $ | $ |
| Net increase (decrease) from balance last week | $ | $ | $ | $ | $ | $ |
| **NEW COMMITMENTS MADE DURING WEEK ENDED** | | | | | | |
| Revenue Expenditures: | | | | | | |
| Raw material and parts | $ | $ | $ | $ | $ | $ |
| Supplies | | | | | | |
| Repairs | | | | | | |
| Advertising and catalogue | | | | | | |
| Other expense | | | | | | |
| Sub-total | $ | $ | $ | $ | $ | $ |
| Capital Expenditures: | | | | | | |
| Machinery and equipment | | | | | | |
| Dies, tools, fixtures & patterns | | | | | | |
| Office equipment | | | | | | |
| Other capital expenditures | | | | | | |
| Sub-total | $ | $ | $ | $ | $ | $ |
| GRAND TOTAL | $ | $ | $ | $ | $ | $ |

AH345 Rev. 2-48 DATE:

*This is weekly report form on "Analysis of Purchase Commitments". It provides for showing outstanding balance and new commitments for the week, under two headings: Revenue and Capital Expenditures, and a Grand Total*

# Get the FACTS on NATIONAL'S *Lightweight* Posting Tray and All-Purpose Stand

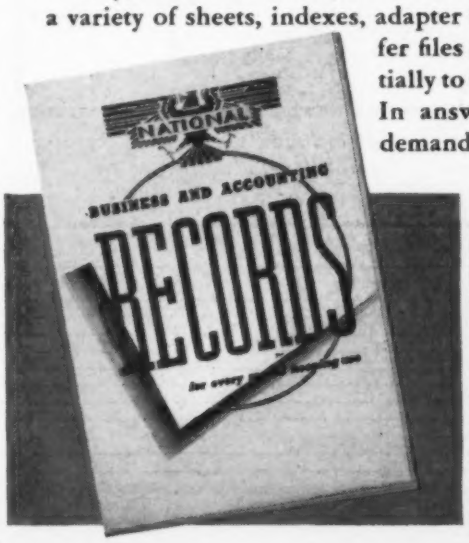


NATIONAL'S new posting tray . . . of aluminum construction . . . is light in weight and a "bear" for wear. The stand is equally rugged and is designed for use with eight different adapter tops.

Tray, stand and hood form the basic outfit . . . with a variety of sheets, indexes, adapter tops and transfer files to add substantially to the utility value. In answer to popular demand, we are now offering a new size tray, 5″ x 8″.

Before you buy, get the facts . . . *all the facts* . . . on the plus values that are yours in NATIONAL Equipment.

For full details on all NATIONAL Equipment . . . including information on Vertical Visible, Rollomatic, Ring-Master Visible and the new size 5″ x 8″ tray, send for our new Business and Accounting Records Catalog. Price $1.00.




NATIONAL

**NATIONAL BLANK BOOK COMPANY, DEPT. P**
HOLYOKE, MASSACHUSETTS

Gentlemen:
Please send my copy of your new Business and Accounting Records Catalog. Bill me for $1.00.

*Name* ..... *Title* .....
*Company* .....
*Street* .....
*City* ..... *State* .....

# A FEATHER in Any P.A.'s Cap!

SEA FOAM BOND



## America's Favorite *Lightweight* Business Paper

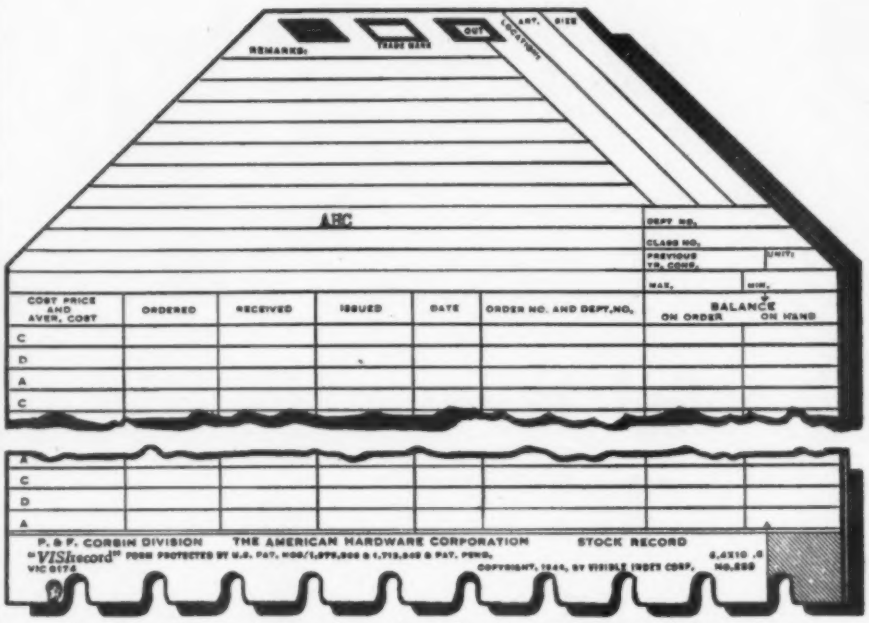
- **STANDARDIZES OFFICE FORMS**
  Keeps your entire record and communication system uniformly businesslike.
- **SAVES MONEY 2 WAYS**
  Sea Foam's *lightness* cuts down postage. Sea Foam's *thinness* means extra sheets per pound.
- **MAKES 14 CLEAR CARBONS WITH YOUR TYPEWRITER**
  Cuts copying time with pen, pencil or typewriter. So thin it saves valuable file space. Yet it's strong to stand up in files.
- **7 EFFICIENT ROUTING COLORS**
  Sea Foam comes in white or bright colors to facilitate fast, accurate routing.



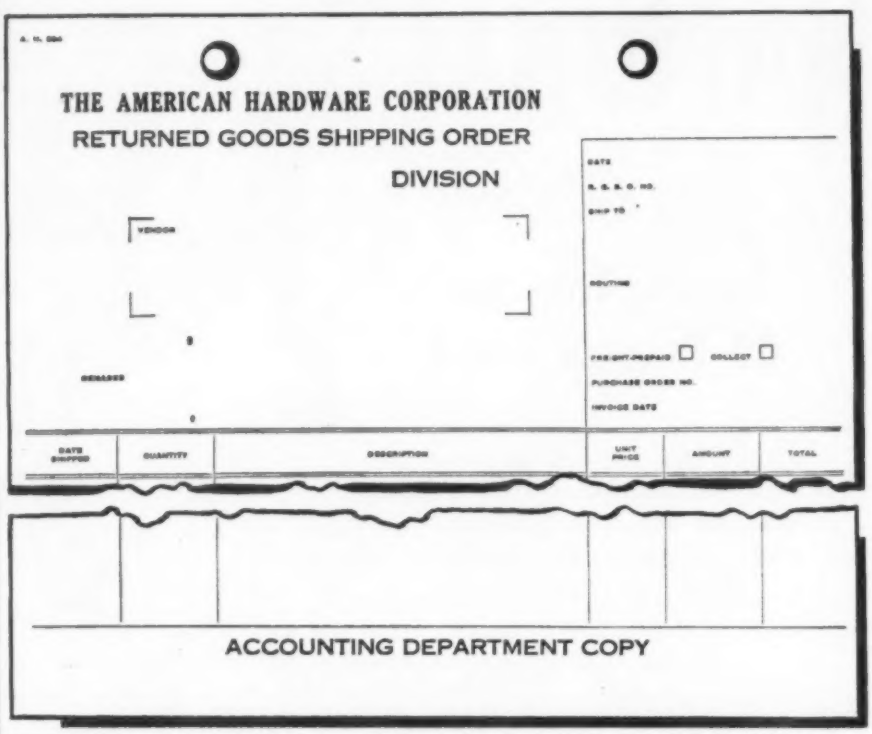
***Sea Foam's* FREE Test Kit**
Can Help You Rate Another Feather! Write on your Company Letterhead.

**BROWNVILLE PAPER COMPANY**
*The Mill of Fine Lightweight Papers*
17 Bridge St. Brownville, N. Y.

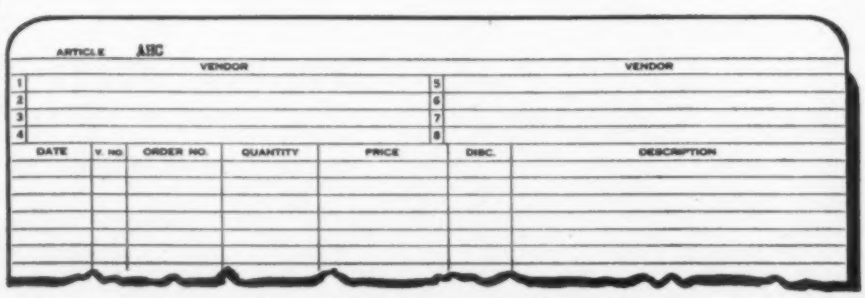

(*Continued from page 218*)




*"Visi Record" Stock Record Card used in Materials Control Department. This card is 6½" wide x 10" long.*




*"Returned Goods Shipping Order." Copies include "packing list" and two for Material Control Department. Size 8½" x 11".*




*Commodity and Price Record card, size 8" x 5".*




# Don't rely on *FAINT-HEARTED* Copies

UNDERWOOD CORPORATION

## *Get clean, strong carbon copies with Underwood Corporation Distinctive "Non-Curling" Carbon Papers...Save Money!*

Don't let your business transactions depend on weak, hard-to-read carbon copies. Poor carbons invite errors . . . make poor business records.

Eliminate this risk by insisting upon Underwood Corporation Distinctive Carbon Papers that give you sharp, clean, legible copies . . . time after time. Treated with a special plastic, they withstand type impact until all the carbon coating is used. This means up to 50% longer wear . . . greater savings.

And, they're "Non-Curling" to prevent waste and save handling time.

You'll find Underwood Corporation Carbon Papers in different weights and coatings to fit your special requirements. Order them today!

### Business Relies on Underwood Corporation Supplies

**Ribbons** . . . for durability and clean-cut type impressions. They're made in a variety of colors and color combinations . . . in various degrees of inking and with special purpose inks for unusual requirements.

**Mimeograph Stencils** . . . tough and tear-resistant . . . reproduce up to 10,000 copies. Velvet finish gives better visibility, sharp, clear reproductions.

**Mimeograph Ink** . . . quick drying, non smudging. Readily washed off hands and clothes.

**Correction Fluid** . . . quick acting . . . does not "pin hole" any make of stencil. Packed with camel hair brush and burnisher. Sealed to prevent evaporation and waste.

**Carbon Rolls and Paper Rolls** . . . carefully made to exacting specifications for Underwood Elliott Fisher and Underwood Sundstrand accounting and billing machines . . . as well as other types of office machines. Tally rolls also available in standard lengths to fit most makes of accounting machines.

**Hectograph Carbons** . . . provide beautiful, sharp, clear masters. Eliminate unsightly stains on hands and clothing. Not affected by summer temperatures or high humidities.

*For prices and complete information call your nearest Underwood office.*

© 1949

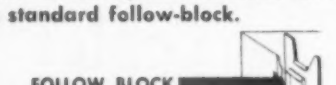
# Underwood Corporation

One Park Avenue
New York 16, N. Y.
Supply Division
Burlington, N. J.

# SAVE THE SPACE OF ONE ENTIRE FILE DRAWER IN EVERY FILING CABINET

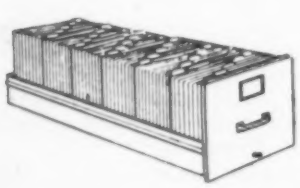



**Div • I • Dex saves nearly a foot in each file drawer (one drawer to a cabinet) by eliminating the 'dead' space consumed with the use of a standard follow-block.**




**Div • I • Dex serves 3 *additional* purposes . . .**

- **It holds folders erect so that index labels are visible at all times.**
- **It simplifies progressive filing with the Div • I • Dex Drop-in Method. The six Dix • I • Dex compartments in each drawer can be used separately. The overflow of any compartment can be quickly slipped into the one following, without disrupting the continuity of the system.**
- **It cuts the filing clerk's time spent in looking for the information he needs to do his job.**



**Try a set of six Div • I • Dex units in just one file drawer. See for yourself how it saves space, time.**

**Div • I • Dex can be purchased through your stationer, or further information may be obtained by writing to . . .**

**CEL·U·DEX**
**1 MAIN STREET BROOKLYN, N. Y.**


## MC BEE COMPANY EXECUTIVE CHANGES

B. F. Cutler has been appointed assistant to D. R. Zenner, president of the McBee Company, Athens, Ohio. He will also retain his position as treasurer of the company.

Harry A. Baker, vice president and a member of the board of directors has announced his retirement as an official and director. He will continue to serve in an advisory capacity, and will be actively engaged in sales in Florida.

* * *

## ELECTED VICE PRESIDENT IN CHARGE OF SALES IBM



Charles E. Love, general sales manager of International Business Machines Corporation, New York, N. Y., was elected vice president in charge of sales at a meeting of the companys' board of directors.

A graduate of Hobart College, Mr. Love joined the company in 1932 as a student sales representative at Rochester, N. Y., later served in several sales executive capacities in Portland, Me., Peoria, Ill. and Chicago, subsequently became instructor of sales in the IBM employees' training school at Endicott, N. Y. and then served successively as Electric Accounting Machine Division manager in Boston and Chicago.

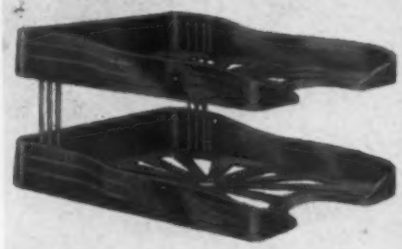
In 1944 he entered the United States Navy, from which he was discharged in 1946 with the rank of lieutenant. He returned to IBM as sales manager of its Western District, and was appointed general sales manager in 1947.

* * *

## AUTOMATIC LETTER-WRITING MACHINE DEVELOPED

A completely new automatic letter-writing machine which produces individually typed letters, including date, inside address, salutation, main body, and closing salutation by merely pressing one button has been developed by the American Automatic Typewriter Co., Chicago, Ill. Known as the Model 5060 Auto-Typist, the machine may be used with any standard typewriter. Its typing mechanism is activated pneumatically at speeds up to 150 words a minute by means of a perforated record roll. A


*cuts Tray-Time*



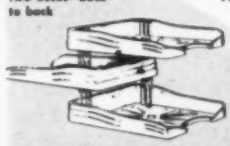
**SWITCH TO MORRIS TRAYS**



Pyramid—letter on legal—with paper holder

Save time with Morris Trays! They provide more "hand" room, better segregation, larger capacity. Streamlined, light weight, they are easily handled. In popular colors, steel grey, antique bronze, walnut, office green, deep mahogany. Morris Trays hold letter files too. Little minutes saved multiply in precious hours. At better stationery stores —or we'll tell you where. Write or wire.

One tray space for two desks—back to back



THE *Bert M. Morris* COMPANY
8651 WEST THIRD ST. • LOS ANGELES 37, CALIF.

Why *Sheppard* Envelopes ?

**THEY LOOK BETTER —**

The designing, printing, color-matching reflects highest quality work. Note the smooth, locked seams and easier typing and filling.

**THEY TASTE BETTER —**

Sure, we've got fancy sealing machines but everybody has to lick an envelope sometimes. That's why it pays to insist on the Mint-E-Seal Sheppard flap. It costs no more. It sticks better.

**THEY WORK BETTER —**

From the easy-open banding and good looking durable cartons right down to putting the envelope in the mail, Sheppard envelopes are easier to use. Even the flaps are scientifically cut to least interfere with typing and stencilling.

**Write today for sample book and amazing price values.**

*Sheppard* with the flavor seal flap
**ENVELOPES**
1 Envelope Terrace
Worcester 4, Mass.

second control button is said to permit automatic addressing of individually typed envelopes at the rate of almost 1500 a day. It is stated that the machine may be used for producing an infinite variety of letters, the operator selecting the appropriate paragraphs by means of numbered push-button selector keys. The machine can also be utilized as an automatic billing machine when used in conjunction with a billing typewriter. The manufacturers claim that one operator using the Auto-Typist can produce as many as 500 perfectly typed letters a day.

### ELECTRIC TYPEWRITER WITH CARBON RIBBON ATTACHMENT



An electric typewriter with new Carbon ribbon attachment is announced by Remington Rand Inc., 315 Fourth Avenue, New York, N. Y. Designed to prepare photographic and direct plate masters, the new machine is available in carriage widths up to 27". It is quickly convertible to a general purpose typewriter through the use of an all Nylon (fabric) ribbon. The electrically controlled type action of the machine assures uniform type impressions over the entire keyboard, the intensity of impression being controlled by means of a manifold dial control. This device can be adjusted to increase or decrease the force of typing action according to the requirements of the plate being prepared whether plastic, paper, zinc or other. For additional information write to the Business Machines and Supplies Division at the address shown above.

### ATLANTA PAPER COMPANY OPENS NEW PLANT

The Atlanta Paper Co., Atlanta, Ga., formally opened its new one-and-a-half-million dollar building the latter part of January. The plant is over 900 feet long and ranges in width from 225 to 300 feet, the entire manufacturing section being on one floor. Business offices occupy two floors at one end of the building. Among the equipment units is a corrugating machine 78" wide which is capable of corrugating up to 400 feet of board per minute. The company makes a variety of packaging products ranging from printed acetate, glassine or cellophane window boxes to Z and W weather-proof box. Its specialties are folding cartons and corrugated boxes. The company employs 700 people.

(*Please turn to page 224*)


**WANTED**

**TOUGH JOB WITH P. A.'S**

Dependable line of high quality duplicating supplies seeks regular employment in your business. Guarantees hardest work. Sparkling results. Specially qualified for any kind of machine and job. Pay: lasts longer so costs less. References: leading P.A.'s from coast to coast. Write today to F. S. Webster Company, 7 Amherst St., Cambridge, Mass. Immediate delivery.

**HIRE WEBSTER FOR EXTRA VALUE IN EVERY PRODUCT**

1. **Webster's Pencil Carbon** *gives at least 100 impressions* from a single sheet.
2. **Webster's Micrometric Carbon Paper** with its exclusive numbered edge eliminates retyping for spacing errors. Gives clean, sharp impressions even after *continuous hard usage.*
3. **Webster's complete line** of Spirit duplicating supplies, including Shurclean Spirosets, spirit carbon papers in all popular colors, fluid and master papers turn out *clean, brilliant copies.* And Webster's hektograph skin cleaner easily removes ink stains and dirt, leaving hands soft and smooth.




Next time you need long lasting duplicating supplies of dependable quality, order Webster's. Consult your nearest dealer or write to F. S. Webster, 7 Amherst Street, Cambridge, Massachusetts.

**F. S. WEBSTER COMPANY**

7 Amherst Street, Cambridge, Mass.






THIN PAPERS
*Reduce*
TYPING, MAILING and FILING COSTS
*Use*
ESLEECK
THIN PAPERS

Fidelity Onion Skin
Clearcopy Onion Skin
Superior Manifold

Esleeck Manufacturing Co.
Turners Falls, Mass.


(*Continued from page 220*)

FORM P-1108
AHC **THE CORBIN CABINET LOCK CO.**
**RECEIVING REPORT**
ACCT. DEPT. 1
No. 26672

RECEIVED FROM — DATE
DEPT. & REQ. NO. — P.O. NO. — CAR NO. — PRO NO.
DEL. BY — CHGS.
DISTRIBUTION

*"Receiving Report". Copies are made for Accounting, Cost, Delivery, Receiving and Purchasing departments.*

Form A. H. 130 256-12-40
AHC **MEMORANDUM**
TO — FROM — 19__

| ORDER NO. | VENDOR | PROMISE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

*Interplant memorandum form for expedited items*

**The American Hardware Corporation**
NEW BRITAIN, CONN.

We request that you give this form the same attention you would a dictated letter and REPLY PROMPTLY.

We are interested in securing information about P. & F. CORBIN Order Division No.
Dated ____ for ____
PLEASE ANSWER THE QUESTIONS CHECKED IN THE SPACE PROVIDED.
1. Acknowledge this order and advise definite shipping date
2. When will you ship? Your acknowledgment does not advise
3. Material urgently needed. Advise shipping date
4. When will you complete order?
5. This is our SECOND REQUEST for information. Immediate reply is requested
6. Delivery was promised ____ What is status?
REMARKS

Yours very truly,
THE AMERICAN HARDWARE CORPORATION
J. C. Andrews, Purchasing Agent

Return to -
THE AMERICAN HARDWARE CORPORATION
NEW BRITAIN, CONNECTICUT

*Expediting Form on letter-size sheet.*

THE AMERICAN HARDWARE CORPORATION
**REQUEST FOR VOUCHER**
19__
PAY TO
Amount $
REASON
From — Requested By
Dept. —
Division —
Distribution — Approved By
Voucher No.

*The "Request for Voucher" is used when a check is sent out with an order. Size 7" x 7".*

Vendor — AHC — Purchase Order No.
Req.
DATE | TIME | DESCRIPTION

*Card Record, 5" x 3", used in tickler system in the Expediting Department.*

AHC — INVOICE FOR YOUR APPROVAL
COMPANY
INV. DATE
AMOUNT
PLEASE O. K. AND RETURN TO - PURCHASING DEPT.
DATE — TO

*Invoice Approval Slip*

## ROTARY RECORD FILES NEW CATALOG

A new combined catalog and price list featuring Natural Rotary Record Files that use ordinary card records on any grade of paper without punching or any other special preparation, has just been released by the Herring-Hall-Marvin Safe Co., Hamilton, Ohio. It is prepared in loose leaf form, size 11 x 8½, attractively bound. User price schedules for all zones are shown.

New methods for alphabetically guiding records-in-motion are featured. Charts are furnished for approximating the number of guides by indexing requirements for different record volumes, and for assigning indicia to tab positions. H-H-M flashers are featured for signaling. All standard signals for vertical card records can be used in the Rotary Record File.

Innovations featured include convenient desk trays for both the large electrically operated floor models and the small hand models; a steel posting table with 24″ wide x 28″ deep composition top saves floor space and provides room for incoming and outgoing traffic, and provides ample work space. Stands are offered that quickly convert hand models into small, mobile floor models.

## USE ELECTRONIC WELDING PROCESS IN MANUFACTURE OF BOOK COVERS

An announcement by the National Blank Book Company, Holyoke, Mass., reveals a new, revolutionary electronic welding process developed by the company for use in the manufacture of book covers. Employing a vinyl plastic covering, seams are electronically welded, requiring no glue or stitching. First application of the new process is being made in the company's "National Memo" which is available in three pocket sizes and in four colors. The vinyl plastic cover used in this product gives the feel of pliant softness found in old leather bindings. In addition the "National Memo" features gold-plated rings, acetate fly leaves and a convenient pocket inside the back cover.

## EASTERN CORPORATION ACQUIRES CONTROL OF ROYAL LACE PAPER WORKS

The Eastern Corporation, Bangor, Me., acquired control of all of the capital stock of Royal Lace Paper Works, Inc., Brooklyn, N. Y. The acquisition further diversifies the operations of Eastern Corporation, which manufactures pulp and fine writing papers for business use. No change in the policies of Royal Paper Works, Inc., is contemplated. Officers of Royal Lace, recently appointed, are Clyde B. Morgan, president; J. M. Altman, W. A. Roehm, Martin Silberman and H. B. Smith, vice presidents. Mr. Smith is in charge of sales and advertising.

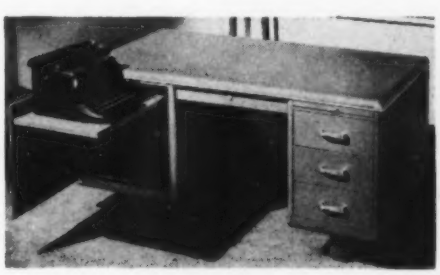
(*Please turn to page 226*)




*"... and pleasant working conditions..."*

**This employer knows that fine, efficient and attractive office equipment is the key to obtaining and retaining top notch personnel. . . . Smarter still, he has chosen Security CRESTLINE desks for his complete installation . . . executive and general offices. He's saving money too, for CRESTLINE's all steel construction and designed efficiency insure him a lifetime of trouble-free use.**

**For a single unit or a complete office installation . . . look first to the finest . . . to Security CRESTLINE.**



MTPL-60 CRESTLINE Secretarial Desk

Crest LINE

SECURITY STEEL EQUIPMENT CORP., AVENEL, N. J.

A LINE TO BUILD ON Security STEEL

## MACHINES DESIGNED TO SPEED INCOMING AND OUTGOING MAIL

Two new products, designed to speed incoming and outgoing mail, are announced by Commercial Controls Corp., Rochester 2, N. Y. They are the multiOpener and the multiSealer, both all-electric, high speed, precision built machines.

The multiOpener will automatically open and stack thousands of envelopes per hour, and is equipped with an automatic cutting adjustment. The dial may be set for light, medium, or heavy cut, and uniform cutting the full length of envelope edge without injury to contents, is assured by the precision feed principle.

The multiSealer has a water feed which assures uniform flow of water to the gummed envelope flap. Any excess of water is automatically returned to the tank. The machine is equipped with an all-new sealing blade which means positive sealing and constant cleanliness. It seals all standard size envelopes.

## THREE-PIECE DESK ASSEMBLY IN HEAVY GAUGE STEEL

New idea in use of office work space consists of an assembly of two cabinets and desk top styled the Sect-O-Desk, offered by Kalmus-Golden, Inc., 11 W. 32nd St., New York, N. Y. As shown in the illustration, the base cabinets offer a choice of two-drawer letter file or a three-compartment cabinet with a door that can be locked. The cabinets are of standard desk height, 30" x 15" wide and



**The top of the Sect-O-Desk provides a working space 24" x 50" wide.**

24" deep. The top, which fits snugly over the cabinets is 24½" deep x 50" wide, and is braced so that they are held in place. Should the desk be no longer needed, the two files can be stacked one on top of the other to make one of standard height. The three piece unit in heavy gauge steel is available in olive drab or gray baked enamel.

## WALKIE-RECORDALL SOUND RECORDER AND REPRODUCER

The Walkie-Recordall, combination sound recorder and reproducer (weighing 8 pounds) enclosed in 4" x 8" x 10" carrying case, for permanent and on the spot sound recordings, is announced by Miles Reproducer Co., Inc., 812-814 Broadway, New York, N. Y. It is a battery operated unit, which makes recordings with a concealed microphone, of lengthy conversations of nearby and distant voices, equalized automatically, while standing, walking or riding on trains, planes, autos, or in places where current is unavailable. The recording is noiseless. Batteries used are of standard type and may be purchased anywhere.

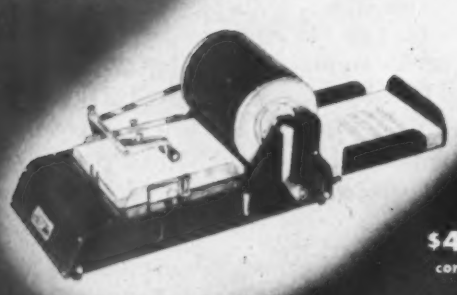
## NEW REMINGTON RAND CATALOGUE ON POSTURE SEATING

A new booklet on the advantages of posture seating in offices from standpoints of good health and increased working efficiency — has just been published by Remington Rand Inc.

The 22-page, four-color booklet, containing full catalogue data on the company's line of Aluminum Posture Chairs, points out that the chairs are adjustable five ways to conform to the vastly physical proportions of their users. The chairs minimize fatigue, according to the book-


HEYER ☆ FOR EVERYTHING in Duplicating

A Higher Quality Since 1903



$49.50* complete

BIG PERFORMER FOR SMALLER BUDGETS

Model C Lettergraph—a full size stencil duplicator at an attractive low price. It delivers 100 or more clear copies per minute—thousands of copies from one stencil.

*Plus Federal Excise Tax

Automatic feed operates simply and easily. Adjustments for various size papers quickly made. Single feed arm allows convenient loading of paper. Easily inked, perforated drum accommodates standard legal size stencils.

Sturdily constructed for years of quality service.

Write for Complete Catalog

Offered by Leading Dealers Everywhere



THE HEYER CORPORATION

1886 South Kostner Avenue • Chicago 23, U.S.A.



**Are Your Catalog and Information Files Up-to-Date?**

Here's a way to add the latest data on new developments to your catalog and information files with a minimum of effort.

The Reader Service Department of Purchasing Magazine will obtain for you any of the new trade literature listed on pages 19, 20, 22, 24, and 26, or additional facts on any of the products mentioned in the "New Products and Ideas" section, pages 140-162.

Simply write on your company letterhead, indicating the numbers of the items on which you want literature or further information.

Check these pages now mentioning month of issue and send your request to:

**Reader Service Department**
**PURCHASING MAGAZINE**
**205 E. 42nd St., New York 17, N. Y.**

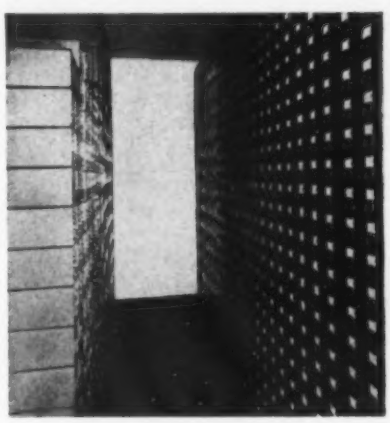
let, by providing gentle support where it is needed most — in the small of the back.

All available types of the Posture Chairs are illustrated, including models for executive, secretarial and clerical use. Covering materials, including plastic coated fabric, machine-buff leather, Bordeaux-Caval Mohair and Bedford Cord, all available in a wide variety of colors, are illustrated in full-color photographs.

Identified as No. FF-116, the booklet may be obtained at any Remington Rand Branch Office or by writing to the Home Office at 315 Fourth Avenue, New York 10, New York.

## DEAD STORAGE FILES

The accompanying illustration shows type of dead storage files made by the All-Steel Equipment Inc., Aurora, Illinois. The files are constructed entirely



**The files are fire resistant, dustroof and rodent proof.**

of steel, properly reinforced to permit stacking one upon another from the floor to the ceiling without any binding of the lower drawers. Each unit is an individual steel filing case with easy-sliding drawers. The files can be manufactured to fit any size form.

## MAGNETIC TAPE RECORDER

New low-priced magnetic tape recorder especially suited for use in business and industry is being marketed by the Allied Radio Corp., 833 W. Jackson Blvd., Chicago, Ill. A 1200-ft. reel of tape provides a full hour's recording and may be used over and over. The recorder may be used for inventories, to record important conferences, or as a teaching aid in sales and production training programs. Recording speed is 7½" per second—rewind speed is 20 times as fast. Recordings can be made from the microphone supplied or from any radio, FM tuner or phonograph. The recorder is complete with a built-in high grain amplifier and PM speaker for playback, and also has provision for connection to an external amplifier and speaker. The recorder is housed in a portable case covered with two-tone brown pebble-grain leatherette.


# What are You! A Purchasing Agent or a Philanthropist?




Bro-*ther*, I knew what was coming when old J. B. barged into my office with that sheet of MARATHON Carbon Paper in his fist . . . Was he mad? . . . like two wet hens!

"*D'ya think we're made of money? What's the big idea, spending so much for carbon paper?*"

"But, Mr. Butler, I . . . "

"*No BUTS,*" *he roared,* "*Carbon Paper is carbon paper. You don't have to pay that much . . .* "

"I'M NOT PAYING 'MUCH' " (Boy, I really shouted him down) "MARATHON IS A BARGAIN. WE ACTUALLY SAVE MONEY BY USING IT!"

Before he could get his breath, I got the rest of my points over.

"We use each sheet of MARATHON dozens of times—not just once or twice—and we get copies as good as the first."

"And our girls like MARATHON better . . . it's clean . . . easier to handle . . . doesn't smudge, curl, or wrinkle."

"We use only one-third as much MARATHON as that old stuff . . . and we get COPIES YOU CAN READ!"

I was so steamed up that I hadn't noticed J. B. had cooled off until he patted me on the shoulder and actually SMILED!

"*O. K. You know what you're doing. We'll use MARATHON!*"




**MARATHON**



**CARBON PAPER**

Look for this symbol on the back of all Columbia Marathon Carbon Paper. The Carbon Paper that satisfies 80% of all office requirements. Carried by Leading Stationers—Everywhere!

**Columbia**

**RIBBON & CARBON MANUFACTURING CO., Inc.**

*Main Office & Factory:*
150 Herb Hill Road, Glen Cove, L. I., N. Y.
*New York Sales & Export:* 58-64 West 40th St.

Branch Offices & Distributors in principal cities.
Consult your local Telephone Classified Directory.

**USE THIS COUPON FOR FREE SAMPLES**

COLUMBIA RIBBON & CARBON MFG. CO., Inc. P-3
150 Herb Hill Road, Glen Cove, L. I., N. Y.

*Please send me free samples of Columbia Marathon Carbon Paper, size . . . . x . . . . and name of nearest dealer.*

Your Name . . . . . Position . . . . .

Firm . . . . .

Address . . . . .

City . . . . . State . . . . .

*Your Weddings and Bristols should be Right*

**MAKE SURE with RISING**

For a perfect union of color, texture, and surface—and a long, happy association with your customers, rely on Rising Weddings and Bristols! Good printers will confirm that the finest in wedding papers are

**Rising**

**WINSTED • HILLSIDE**

**PLATINUM**

. . . in a wide range of sizes, weights, and finishes . . . for every engraving and printing process that requires quality reproduction.



WHEN YOU WANT TO KNOW . . . GO TO AN EXPERT!

Rising Papers

**Rising Papers**

ASK YOUR PRINTER . . . HE KNOWS PAPER!

Rising Paper Company, Housatonic, Mass.

**SPEED DELIVERIES**

**INCREASE SALES**

WITH

Fent-Onamel

TRADE MARK REG. U. S. PAT. OFF.

*The better labels that cost less.*

- **sparkling colors on hard, snow-white stock**
- **sharp, perfect lettering**
- **extra-strong adhesive**

You get all these *quality features* at *low cost* with FENT-ONAMEL, the only label of its kind made! Over 130,000 satisfied users.

*Write TODAY for samples & prices*

**FENTON LABEL CO.**

DEPT. F2, 506 RACE ST., PHILA. 6, PA.

Please send prices and samples of shipping labels and stickers for _____

(TYPE OF PRODUCT)

Name _____

Firm _____

Address _____

**"I never thought I'd call the boss a darling"**



Can't blame your file clerk for thinking you're sweet. You've just installed Oxford Pendaflex Hanging Folders, and they've turned her filing chores into filing cheers. Incidentally, you've done *yourself* a service. Pendaflex folders cut costs by as much as 20%. Of course, they fit right in your present cabinets.



**Send for catalog today.**

**OXFORD FILING SUPPLY CO., INC. Garden City N. Y.**

Don't file it — HANG IT!

Oxford

**PENDAFLEX®**

**HANGING FOLDERS**

## THE "SKYRITER" ANNOUNCED BY L C SMITH & CORONA TYPEWRITERS INC.

The Skyriter, an exceptionally light and compact typewriter, is announced by L C Smith & Corona Typewriters Inc. It is equipped with a full size office typewriter keyboard, and is said to be small enough to fit in a desk drawer, grip or brief case. It weighs approximately nine pounds. It is claimed that, despite its size, the Skyriter is fully capable of performing all the usual duties of a correspondence machine, and at a speed to satisfy even a professional typist.

## "WIRE-LESS" TWO-WAY INTER-COMMUNICATOR

Vocatron is the name of a carrier-call "wire-less" two-way inter-communicator developed by the Vocaline Company of America, Inc., Old Saybrook, Conn. Because it employs only the usual 110 volt system as a carrier, this unit requires no installation beyond plugging in to any electric receptacle.



**Instantaneous communication within a range of approximately one mile, between sets with similar frequency settings.**

The sets are light, weighing about four pounds; compact, measuring 5¼" x 4¾" x 6¾", and portable. They offer instantaneous communication between any two sets with similar frequency settings on the same power line within a range of approximately one mile. Vocatron has wide application in business and industry as a means for inter-department communication.

## BOOKLET ON STEEL DESKS

A new booklet, No. FF-115 detailing "Foremost" steel desks is available from the Remington Rand branch offices or by writing to the home office, 315 Fourth Avenue, New York 10, N. Y. The 20-page booklet, fully illustrated, describes Foremost departures in design from standpoints of appearance and usefulness. One of the salient features of the desks is their use of interchangeable pedestals and tops, prmitting a wide choice of desk assemblies to suit different office needs. Another, according to the booklet, is the elimination of waste space achieved by smaller, more functional sizing, and permits the comfortable use of four desks in a space ordinarily used by three.

### NEW SAFE-FILE HAS MANIPULATION-PROOF LOCK

A new line of safe-files being introduced by Remington Rand Inc., 315 Fourth Avenue, New York, N. Y., features a manipulation-proof combination lock in which the faint but tell-tale "click" in the tumblers by which a smart manipulator using a stethescope can often "feel" out a combination sequence is minus. The lock is encased in a highly-tempered steel box.

### LAMINATED DESK TOPS IN WOOD GRAIN REPRODUCTIONS

"Richwood" is the name of laminated plastic permanent desk top for use on office desks and in schools, colleges, etc., introduced by Laminated Plastics, Inc., 718 Beacon Street, Boston, Mass. It is a high pressure laminate available in accurate wood grain reproductions. Its outstanding qualities are its unusual glare reduction, durability and cleanliness and its non-polarization of light. The company states that the tops will not chip, peel or craze and are virtually indestructible, and that the surfaces stay flat and smooth indefinitely. It is now being manufactured in ribbon walnut and rift oak, and is also available in African mahogany, gray mahogany, primavera, walnut, bleached walnut and limed oak. Refinishing of old desk tops is being done at plants in Boston, Mass., Detroit, Mich., Cleveland, Ohio, and Fort Lauderdale, Fla. The company also states that its per year cost is substantially lower than that of conventional surfaces.

### DESK-TYPE ROTOR FILE

New desk-type Rotor-File for use where space conservation is essential, is announced by The Wassell Organization, Westport, Conn. Not only is the Rotor-File a filing unit, but it is also a single or double desk. When the Rotor-File unit is not being used, a cover fits over the opening flush with the top of the desk, giving the operator additional



desk space. When the unit is in operation, the cover is removed and the operator immediately has any card up to 50,000 within a few inches of her fingertips. The V type opening makes any of the 50,000 cards fully visible for reference without body movement of the operator. The entire unit doesn't take up any more space than two standard size desks.

### TAPE RECORDING MACHINE WITH NEW FEATURES

Exclusive features of new type recording machine known as the Reelest marketed by the Universal Moulded Products Corporation, 1500 Walnut Street, Philadelphia, Pa., include twin-track recording without interruption for rewinding; new reversing device plays or records in two directions for one hour without attention; and an electric eye volume indicator makes for perfect recording. The machine is also featured by its easy portability. It is encased in simulated leather case.

### USE OF DUPLICATOR SPEEDS UP ADDRESSING AT LOW COST

Use of a liquid duplicator for making copies of addresses on gummed labels, where the same list is being used several times a year, is being promoted by Ditto, incorporated, Chicago, Ill. Ditto furnishes master sheets which are ruled into 33 spaces, and also provides gummed perforated copy sheets which likewise are divided into 33 spaces. The gummed labels are separated and attached to the mailing piece. The master is filed for use at a later date. New masters are made for corrected addresses. Sample sheets and gummed labels will be furnished on letterhead request.


Weldon Roberts Erasers

*They Correct Mistakes in Any Language*

IN DRAFTING ROOM . . . OFFICE . . . SCHOOL

No. 399 TRI-PLY — for typists
CENTER PLY — soft gray ink and type eraser
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# Among the ASSOCIATIONS

## New York Association to Hold Second Purchasing Seminar at Columbia University Starting March 6

The second purchasing seminar to be conducted by the Purchasing Agents Association of New York at Columbia University, in cooperation with the university faculty, will open on March 6. The seminar sessions will be held every Monday for five weeks, ending on April 3.

The subjects and leaders of the sessions are as follows:

March 6—The Purchasing Agent As a Member of the Management Team. What does he do to shape company policies; as the other executives see him; as the president sees him; as industry sees him. Leaders will be: F. C. Mills, Professor of Economics & Statistics; J. Dean, Professor of Business Economics; R. S. Alexander, Associate Professor of Marketing; G. W. Howard Ahl, President of the Purchasing Agents Association of New York, Philip Morris & Co. Ltd. Inc.; C. W. Goodman, Union Carbide & Carbon Corp.; W. H. Old, American Brake Shoe Company. Professor Alexander will be moderator, and Henry Meyer, General Bronze Corporation will give the summary at all sessions.

March 13—The Purchasing Agent as An Executive. Applying psychology in his contacts with sellers, with staff, with other departments. Training programs: company developed and executed; cooperative with institutions of learning. Leaders will be: Dr. Oswald Knauth, Lecturer in Marketing Management; Dr. Paul Nystrom, Professor of Marketing; Professor Alexander; Stanley W. MacKenzie, United States Rubber Company; Harold K. LaRowe, American Cyanamid Company; F. C. Esser, Westinghouse Electric Corporation.

March 20—The Purchasing Agent Looks at Government—Its Impact on His Work. Government affects purchasing by legislation: Robinson-Patman; Clayton; Feld-Crawford; tariffs; stockpiling; farm programs. By financial policy, deficit budgets, etc. By government agencies: I.C.C., F.T.C. Leaders will be: P. Brissenden, Professor of Labor Relations and Personnel; W. Newman, Professor of Management; Professor Alexander; P. J. Clarke, Rohm & Haas Company, President of the Purchasing Agents Association of Philadelphia; D. H. Lyons, Johns-Manville Corporation; A. M. Kennedy, Jr., Westinghouse Electric Corporation.

March 27—The Purchasing Agent As Economist. Comparison of past and present; changing trends, controlled prices. Prices and the Purchasing Agent. The business cycle—merry-go-round or ladder? Business services—their use and value. Leaders will be: W. Newman, Professor of Management; Dr. O. Knauth; Lecturer in Marketing Management; A. T. Poffenberger, Professor of Applied Psychology; Professor Alexander; George A. Renard, National Association of Purchasing Agents; S. F. Heinritz, Editor, PURCHASING Magazine; W. E. Cummin, White Laboratories, Inc.

April 3—The Purchasing Agent Looks Ahead, 1950-1960. A critical survey of the next decade: markets, products, changing trends, prices. The immediate view. The future view. Leaders will be: Dr. Knauth; J. L. Dohr, Professor of Business Law and Accounting; Professor Alexander; M. W. Merrill, United States Metals Refining Co., Chairman of the N.A.P.A. National Committee on Fuel Oil; H. W. Macintosh, L. O. Koven & Bro., Inc.; J. K. Conant, Regent Pulp & Chemical Co., Inc.

### ANNUAL BUYER-SELLER DINNER ALABAMA ASSOCIATION

The Purchasing Agents Association of Alabama held its third annual Seller-Buyer dinner at the Thomas Jefferson Hotel, Birmingham, February 23. Starting with a fellowship hour with members of the sales fraternity at 6:00 P.M., the affair proved to be one of the association's outstanding meetings. The members and their guests heard two sterling talks, one by President T. A.

(*Please turn to page 234*)

## Officers of Tri-City Association



Here are the officers of the Tri-City Association of Purchasing Agents, made up of purchasing agents in the cities of Davenport, Ia., Moline, Ill., Rock Island, Ill., and Clinton, Ia. First row, left to right: Ken Dahlberg, secretary-treasurer; Nat Clark, president; Tom Bolman, national director. Second row: Lloyd Batten, first vice president; Leo R. Keller, second vice president. The association meets the second Tuesday evening of each month, alternating the place of meeting between the three cities of Rock Island and Moline, Ill., and Davenport, Ia. The January meeting was held in Moline at Jul's Danish Farm, and after the business meeting, the film "This is Aluminum" was shown.

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The Gould "Thirty"
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Tests prove that the new progressive solidification and casting techniques employed in the "Z" Plate make the grid 66% more resistant to peroxidation! And why not? Here is the only positive grid in existence that is non-porous and completely solid all the way through—that produces full power throughout long battery life.

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*Always Use Gould Automobile and Truck Batteries*

# Central & Western N. Y. Purchasing Agents Conference To Be Held In Rochester March 22

The Central and Western New York Purchasing Agents Conference will be held at the Rochester Club, Rochester, N. Y. on March 22.

The Conference is being sponsored by the Purchasing Agents Association of Buffalo; the Purchasing Agents Association of Elmira; the Purchasing Agents Association of Rochester, and the Purchasing Agents Association of Syracuse. J. A. Cooney, International Salt Company, Retsof, N.Y., is general chairman of the affair.

The program committee has announced the following program:

9 a.m.—Welcome to Rochester by C. S. Buss, Purchasing Agent, Bausch & Lomb Optical Company. 9.10 a.m.—Business Conditions Forum: Chairman, J. E. Edmonds, Purchasing Agent, Lipe Rollway Corporation. 9:15 a.m.—Analyzing Business Indices Used by N.A.P.A. Dr. Martin A. Brumbaugh, Director of Department of Statistical Analysis, Bristol Laboratories, Inc. 10.00 a.m.—N.A.P.A. Business Survey—How It Works—Where Are We Bound Today? Speaker, Robert C. Swanton, Director of Purchases, Winchester Repeating Arms Company. 10.45 a.m.—Opportunities in Upper New York—Good or Bad? Speaker, Martin J. Hilfinger, president, Associated Industries of New York State, Inc.

Noon—Luncheon. Speaker, George A. Renard, Executive Secretary-Treasurer, N.A.P.A.—"Profits From Purchasing".

1.50 p.m.—Purchasing Manuals Clinic. Chairman, W. B. Wight, Bausch & Lomb Optical Company. 1.50 p.m.—Policy Manuals. Speaker, F. Albert Hayes, Vice President in Charge of Purchasing, Bigelow-Sanford Carpet Company. 2.40 p.m.—Procedural Manuals. Speaker, R. L. Van Cleve, Director of Purchases, Carnegie-Illinois Steel Corporation. 3.30 p.m.—"Information Please", a panel discussion on purchasing manuals. Chairman H. F. Jones, Purchasing Agent, E. I. du Pont de Nemours & Company. Panel members: T. A. Corcoran, G. A. Renard, S. F. Heinritz, R. C. Swanton, F. Albert Hayes, R. L. Van Cleve.

The banquet will be held at 6.30 p.m., following the cocktail hour. Toastmaster will be J. E. Gore, Pure Quill Gasoline Corporation. H. F. Jones, Vice President, District 8, N.A.P.A., will speak on "Eighth District Problems in N.A.P.A.". T. A. Corcoran, President, N.A.P.A., Purchasing Agent, Louisville Courier-Journal-Louisville Times, will speak on "Purchasing—Its Importance in Industry".

Several plant visitations will be run concurrently with the business sessions for those who do not wish to attend the ballroom program. Plant Visitation "A", beginning at 9.15 a.m., will be to the Gleason Works. Plant Visitation "B", also at 9.15 a.m., will be to Kodak Park. Plant Visitation "C", to the Gleason Works, and Plant Visitation "D", to Kodak Park, will start at 1.45 p.m.

Registration fee for the full conference is $7.00 for members, $10.00 for non-members. Fee for the banquet only is $4.00 for members, $5.00 for non-members. Hotel reservations at the Sheraton Hotel are $4.40-$5.85 for single; $6.75-$7.50 for double; $7.75-$8.50 for twin beds. Checks should be made payable to local association or to the Purchasing Agents Association of Elmira. Checks should be sent to one of the following members of the registration committee: Dean Hethington, Crouse-Hinds Co., Wolf St., Syracuse, N. Y.; C. M. Bell (chairman), Durez Plastics & Chemical Co., No. Tonawanda, N. Y.; R. B. Fisher, Sterling Div. Toledo Scale Co., 111 Humboldt St., Rochester 9, N. Y.; P. S. Fawell, Moore Business Forms, 4th & Magee, Elmira, N. Y.

## BRUCE D. HENDERSON GUEST AT WASHINGTON MEETING

A monthly dinner meeting of the Purchasing Agents Association of Washington was held on Thursday, February 9, at the New Washington Hotel, Seattle.

Guest of honor and chief speaker was Bruce D. Henderson, Manager of Purchasing, Stores and Shipping for Westinghouse Electric Corporation's transformer division at Sharon, Pa. Mr. Henderson, who was on a special tour of western purchasing agents' associations, spoke on "The Relationship Between Purchasing, Inventory Control and Management". Accompanying Mr. Henderson to Seattle was Walter N. McPhee of Vancouver, B. C., western vice-president of the National Association of Purchasing Agents.

The annual midwinter party of the association was held on Friday evening, January 27, at the Rainier Club, Seattle. The program included cocktails, dinner, dancing, bingo, and door prizes.

The third educational meeting of the 1949-50 series was held on January 26, at the Central Y.M.C.A., Seattle. The program was of the panel-discussion type, with Lloyd A. Walker, Pacific Coast Co., as chairman, and Prof. Arthur M. Cannon, University of Washington as coordinator. Panel speakers, on the subject "Transportation", were Fred H. Tolan, traffic consultant; Stanley C. Taylor, LaBow, Haynes Company, Inc., insurance brokers; and John H. Andrews, Chicago, Milwaukee, St. Paul & Pacific Railroad Company.

On January 19, members visited the University of Washington, with special attention being given to the facilities of the College of Engineering. Professor Harold E. Wessman, dean of the engineering college, explained the various services in that field offered by the university to business and industry. Following his talk, the group visited the various facilities of the College of Engineering: the mechanical engineering building, civil engineering building, and electrical engineering building, where research, testing and development were seen in action.

# Erie Association Submits Centralized Purchasing Plan To City Officials

Following a request from the recently-elected officials of the city of Erie, Pa., the Purchasing Agents Association of Erie has submitted its recommendations for the establishment of a centralized purchasing department for the city.

The recommendations appear to have been met with general approval, and it is reported that the association has been asked by the mayor and city council to submit plans for a set of forms, and a basic department, and any further constructive suggestions.

Part of the campaign platform of Clarence K. Pulling, newly elected mayor, called for the establishment of a centralized purchasing system for the city. When the new officials took office in January, the local association was asked for help on the question. Sam Langley, General Electric Company, president of the association, and the board of directors, appointed a special committee to consider the problem. Mr. Langley was named chairman, with Kenneth T. Smith, Continental Rubber Works; E. F. Fletcher, Hammermill Paper Company; and H. W. Morgan, General Electric Company, as members. After some research, and with the assistance of George Renard, secretary-treasurer of N.A.P.A., a board-approved brochure was sent to the mayor.

No official approval had been given to the plan at the time of this writing. Public reaction, however, is said to be good, and a local newspaper, the Erie Times, commented editorially, "the purchasing agents presented a well worked out plan for this badly needed bureau and, even better, estimated it will effect economics of between 10 and 15 per cent. The purchasing agents have set a fine example . . . (they) never hesitated and have turned in what we think to be a remarkable plan in short order."

According to the plan submitted, the central purchasing body would buy for all city departments. A well qualified agent, not "subject to political domination", would be employed, with a suitable staff to assist him.

(*Please turn to page* 234)

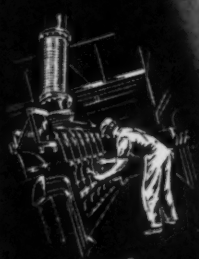
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## TORTURE-TESTED FOR SERVICE . . . PERFORMANCE-PROVED FLEXIBILITY—IT'S PENFLEX FOR LONG WEAR . . . EVERYWHERE

**Whether it's on a diesel exhaust . . . a conveyor tube . . . air, steam or water lines, Penflex tubing has proved itself throughout industry. Rugged . . . tough . . . and flexible, Penflex Tubing is made to stand the most severe usage with the least wear.**

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**Penflex manufactures a complete line of four wall interlocked and seamless welded corrugated flexible tubing . . . plus automatic barrel fillers, rivet passers, accessories and fittings. To cut your "break-even point," write for your copy of "Flexineering At Work."**

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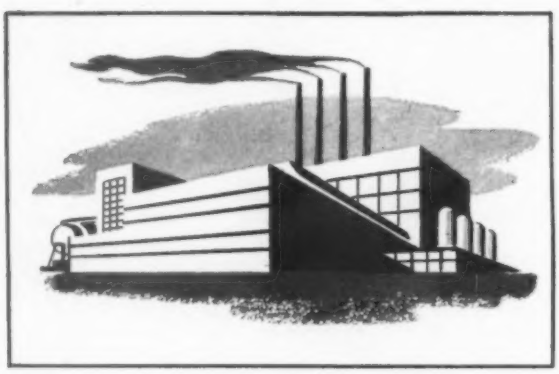
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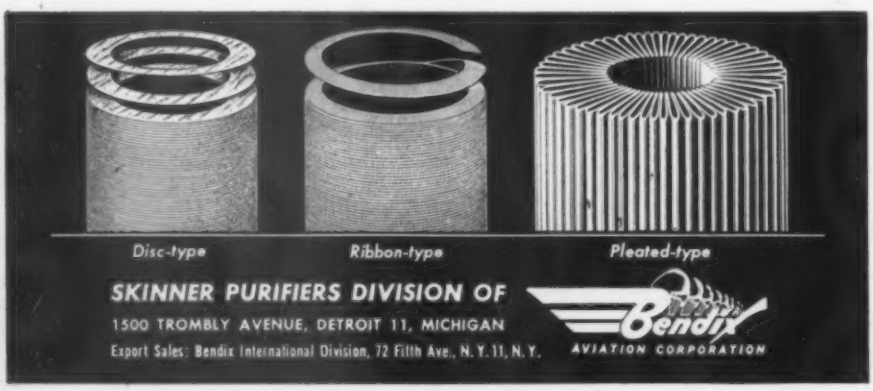
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## Way to Make Liquids Come Clean



Nine times out of ten you'll get a better filtering job with ***Bendix-Skinner*** filters. No magic—just the simple fact that ***Bendix-Skinner*** has developed entirely new and exclusive filtering techniques in twenty years of tackling the tough jobs. We'll welcome an opportunity to prove it. An inquiry costs you nothing and may save you much.

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Bendix AVIATION CORPORATION


(*Continued from page* 230)

Corcoran of the National Association of Purchasing Agents, whose subject was "Let's Look at Our Mutual Problems"; and an excellent talk by Warren Whitney, vice president of James B. Clow & Sons, Birmingham, whose subject was "You Can't Manage a Purchasing Agent." The speakers were followed by an excellent floor show.

The N.A.P.A. Education Program was the theme of meeting on February 9th at the Thomas Jefferson. George H. Cole, Alabama Power Company, lead a panel discussion on "Our N.A.P.A. Education Program—Its Application to our Purchasing Problems." Other speakers, who were limited to three minutes each, were George L. Wilson—Literature; Chester Moates—Visual; Newman Yeilding—Schools and Colleges; Harlan E. Cross—Intracompany; Clyde H. Porter—How to Buy; and. Barnie B. Jones—Locals.

"Scientic Inventory Control—Key to Better Purchasing", was the subject presented by Bruce D. Henderson, Manager Purchasing Stores & Shipping. Westinghouse Electric Corporation. Sharon, Pa., at the association's January 19th meeting.

### AN ANALYSIS OF THE PRICE STRUCTURE—KALAMAZOO ASSOCIATION

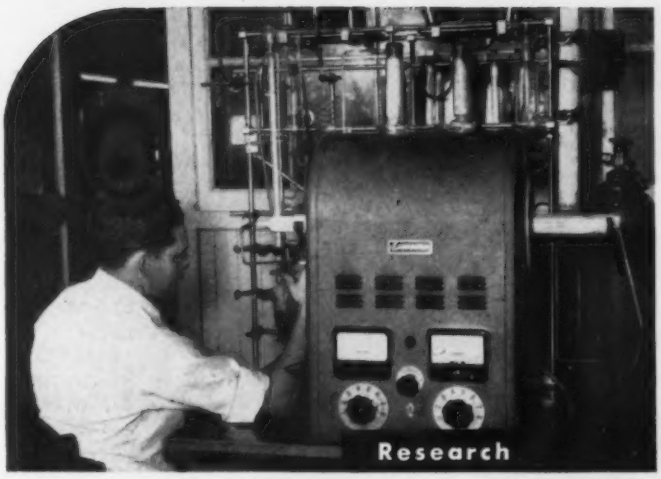
Dr. A. E. Schneider, head of business administration school at Western Michigan College, spoke on "An Analysis of the Price Structure" at the February 9th meeting of the Kalamazoo Purchasing Agents Association, Columbia Hotel, Kalamazoo. At the association's January 26th meeting. Dr. James O. Knauss spoke on "China's Economic Situation with Relation to the United States."

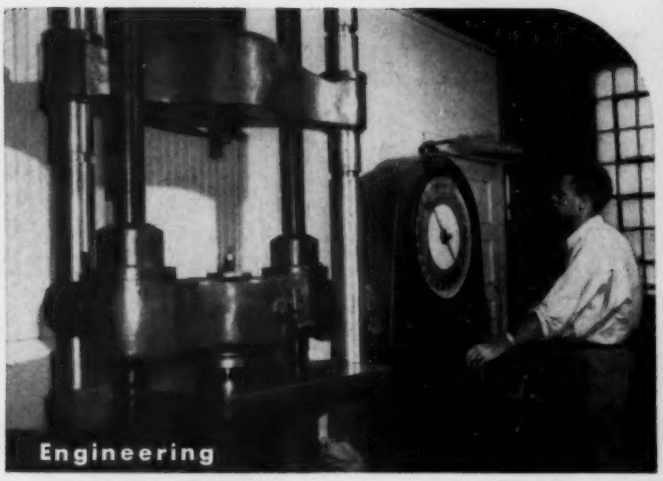
### RESPONSIBILITY OF PURCHASING MANAGEMENT—NEW ENGLAND

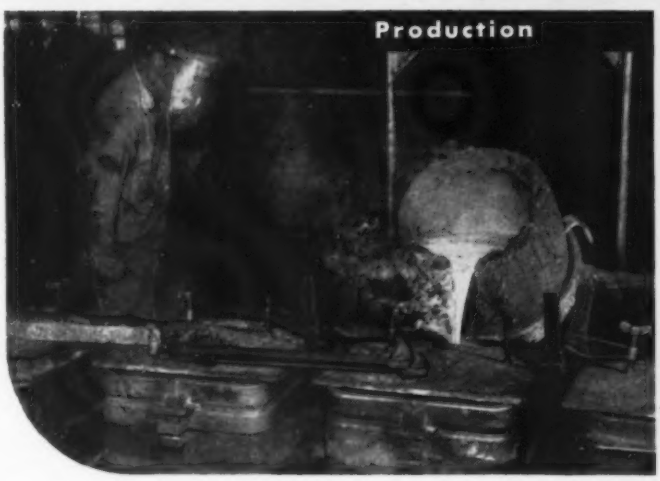
Vincent de P. Goubeau, Vice President in Charge of Materials, Radio Corporation of America, R.C.A. Victor Division, Camden, N. J., was the principal speaker at the February 13 meeting of the New England Purchasing Agents Assn., held in the Hotel Vendome, Boston, Mass. His subject was "Responsibility of Purchasing Management."

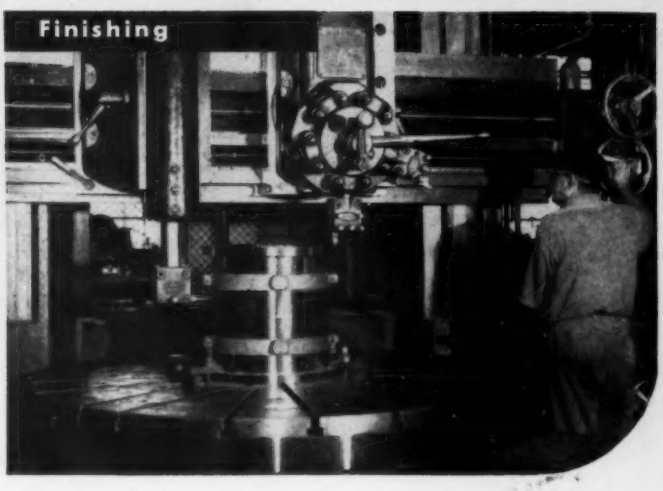
At conference preceding the dinner meeting, a film "The Making of Paper" was shown. This is one of the N.A.P.A. visual education program films. This program was in charge of Education Chairman Frank A. Jepson, Acushnet Process Company. There was also a showing of the Hammermill Paper Company's motion picture, "The Gift of Ts'ai Lun—Paper." Those in attendance were given an illustrated pamphlet published by N.A.P.A. in cooperation with the American Paper and Pulp Association.

(*Please turn to page* 236)




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***THE STEWART-WARNER CORPORATION***, South Wind Division, Indianapolis, Indiana, had a problem joining the upper and lower halves of its "Safe-Air Gas Home Heater". Established methods—bolting, or conventional arc welding were inadequate for today's production demands.

***D. P. Carey***, Airco Technical Sales Representative, was called in. He suggested the completely new, high speed, inert gas-shielded metal arc method of welding stainless steels, aluminum and other hard-to-weld metals . . . the Aircomatic Process. Two heaters were shipped to the Airco laboratory for test welding. The test was 100% successful, and the company immediately ordered Aircomatic equipment and put it to work on a production-line basis.

As a result, former production of 7 units per hour has been increased to 12 units per hour . . . with an accompanying reduction in production costs.

If you want more information about Airco's Aircomatic Welding Process, write your nearest Airco office for copies of form ADR-53 and ADC-661.

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## PANEL ON PAPER HELD AT DAYTON ASSOCIATION MEETING

A regular meeting of the Purchasing Agents Association of Dayton was held on February 9, featuring a panel discussion on "How to Buy Paper." Ted Thompson, Aeroproducts Division, G.M.C., was in charge of the program.

Included in the panel were W. P. Bonner, Reynolds & Reynolds; George Lebert, Standard Register Company; T. M. Armstrong, F. W. Lotz Paper Company; and E. L. Oler, Aetna Paper Company. Mr. Thompson is the instructor in Purchasing and Advanced Purchasing at Sinclair College, and the members of his class attended the meeting.

Guest speaker at the January 12 meeting was Colonel W. A. Amelung, general manager of the warehouse division of Chase Brass & Copper Company, Waterbury, Conn. Colonel Amelung was chief of the metals branch of the Army Service Forces during the war, and has had wide experience in the copper industry. He spoke on "Development of the Copper Industry".

P. K. McCarren, Anchor Rubber Company, is a new member of the association.

## TRAPP NEW PRESIDENT OF TWIN CITY ASSOCIATION

Paul F. Trapp, of Curtis 1000 Inc., St. Paul, Minn., was recently elected president of the Twin City Purchasing Agents Association.

C. A. Vinci, Archer-Daniels-Midland Company was named vice-president; E. A. Vigard, H. B. Fuller Company, local director; and Basil Nelson, Northern States Power Company, secretary and treasurer. Mr. Nelson has served 23 years in the same post.

## CIVIC PRIDE NEW ORLEANS ASSOCIATION

The speaker at the regular monthly dinner meeting of the Purchasing Agents Association of New Orleans, La., was The Rev. A. William Crandall, S. J., Dean, Arts & Science School, Loyola University of the South, whose subject was "Civic Pride". There was also a talk by Robert Elsasser, economist.

## JULIAN DAVIES SPEAKS AT MILWAUKEE MEETING

Julian Davies, Director Purchases of the N. Slater Co., Ltd., Hamilton, Ont., who was awarded the J. Shipman gold medal at the NAPA 34th Annual Convention in New York, for outstanding services in behalf of the purchasing profession, was guest speaker at the February 14 meeting of the Milwaukee Association of Purchasing Agents. The regular dinner meeting was preceded by a Commodity Discussion at which members were encouraged to present procurement problems.

(*Please turn to page* 238)

# "All right," *he said,* "give me one good reason why I should try this new spring steel."

## *—so we gave him three!*



**"First," we told him, "this steel we've developed is lower in cost—in fact will cost you about $7.00 a ton less. Second, it has a better, smoother surface than the steel you're now using, which means that you'll lessen the danger of failure. And, third, with this steel there is less decarburization during heating and you'll get better strength in your springs."**

THAT conversation took place less than a year ago. Since then this company, one of the largest makers of lower-priced cars in America, has used this steel for passenger car and truck springs . . . and has effected savings in steel cost that will run in excess of $100,000 annually.

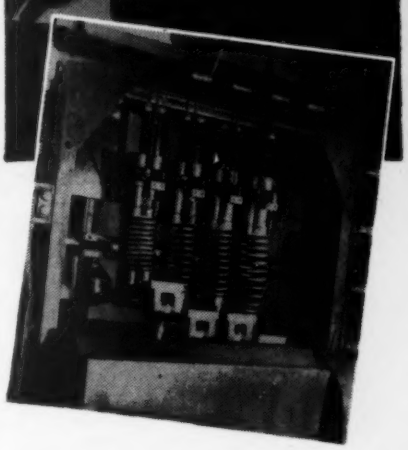
To these savings have been added others equally important. Re-treatment to meet load rates has been reduced from 40% to as low as 2%. Rejects dropped 50%, the inspection crew has been reduced by half.

That these substantial economies are obtained at no sacrifice in spring quality is shown by the fact that in fatigue tests—far more severe than those encountered under normal road conditions—absolutely no spring failures were recorded. Actual service on the road has corroborated these findings and indicates that the better surface and lower decarburization of this steel definitely improve spring performance.

The development of this new spring steel, now officially designated as SAE-AISI 5160, is typical of the constant striving of our metallurgical, research, and operating departments to give you, the steel user, steels *better* suited to your purpose—steels that will improve performance and lower your material and manufacturing costs.

Among such special purpose steels are heavy-duty gear steels like U·S·S SUPER-KORE; superior-strength plate steels like U·S·S Copper-Nickel-Molybdenum; Hadfield Manganese; and Elevated Temperature steels.

That's why we say—if your job demands the unusual in strength, abrasion resistance, durability, stamina, weldability, or forming qualities—put it up to Carilloy Research.



**FATIGUE TEST**—Here passenger car coil springs, produced from SAE-AISI 5160, a new precision-rolled spring steel, are being run 500 hours, sufficiently overloaded to simulate life test on passenger car. No failure yet recorded.

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## Fence MEN AT WORK

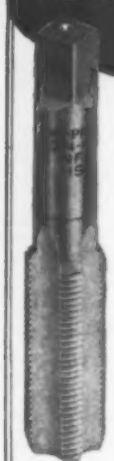
● Yes, Page Chain Link Fence works day and night as protector of persons and property against common hazards. In your industry protective requirements are exacting. Needs vary according to location and conditions. For you we have a valuable new booklet and detailed data on the several styles of Page Fence and Gates and the choice of metals available. It tells why you can expect the best of fence engineering and erection service from the long-experienced Page Fence specialist near you—a firm which knows local conditions. Name and address will be sent with booklet DH-142. Write for it.

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**HY-PRO TOOL CO.**

New Bedford, Mass., U.S.A.


### ANNUAL N. Y. ASSOCIATION PURCHASING-SALES DINNER

The annual purchasing-sales dinner of the Purchasing Agents Association of New York was held in the Hotel Commodore on Tuesday, February 21.

Wallace F. Bennett, chairman of the board and former president of the National Association of Manufacturers was the guest speaker. T. A. Corcoran, president, and George A. Renard, secretary-treasurer, of the National Association of Purchasing Agents also spoke. Among the guests were H. F. Jones, N.A.P.A. vice-president for District 8, and several of the presidents and national directors of associations in the district.

A full report of the meeting will appear in the next issue of Purchasing.

### FORMER PRESIDENTS FETED AT CLEVELAND ASSN. MEETING

Twenty six out of the 28 living former presidents of the Purchasing Agents Association of Cleveland joined that organization in honoring S. Holmes Mansfield, first president, at a dinner in the Hotel Cleveland on January 19. Mr. Mansfield was head of the association in 1915, when it was established.

Mr. Mansfield was presented with a set of luggage on behalf of the more than 170 members present. Arthur G. Hopcraft, Cleveland Worm & Gear Company, introduced the former presidents.

Jim Moran, humorist and press agent noted for such publicity stunts as finding a needle in a haystack, selling a refrigerator to an Eskimo, leading a bull into a china shop, etc., was the guest speaker. Mr. Moran revealed to the audience his intentions to capture the zither market in this country during 1950.

### OREGON ASSOCIATION HEARS OF "RESCUE IN SHANGRI-LA"

An eyewitness description of the "Shangri-La" rescue of a Wac and two other survivors of a plane crash in New Guinea in May, 1945, drew a capacity crowd to the January 17 meeting of the Purchasing Agents Association of Oregon, held in Portland.

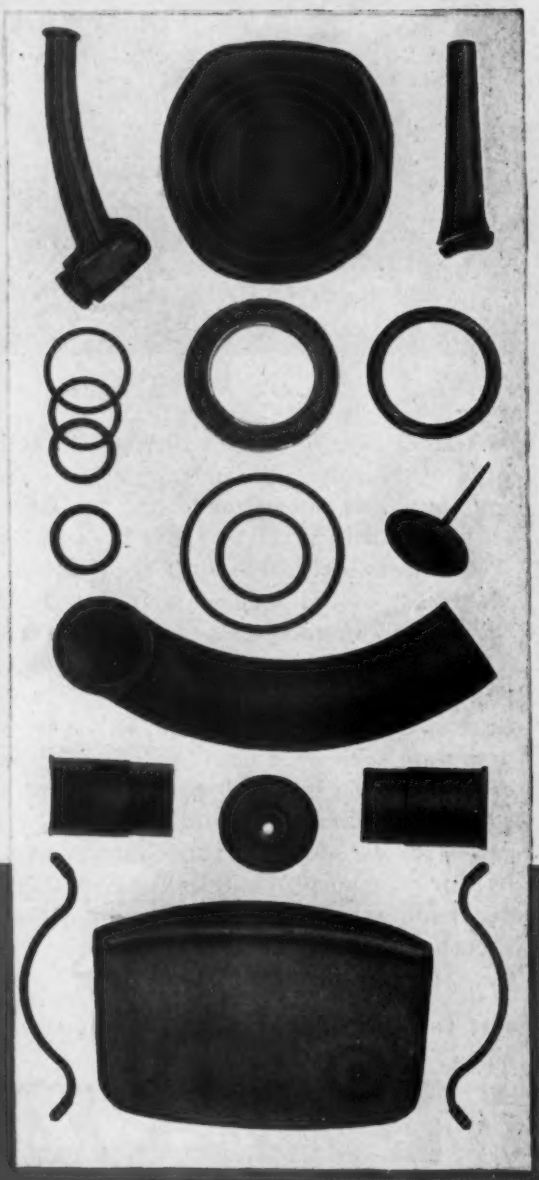
Earl Walter, of the Mail-Well Envelope Company sales department, who was a captain in command of the eleven paratroopers effecting the famous rescue, related the exciting story of their mission. He told how his unit spent three weeks administering aid to Wac Margaret Hastings and the two other survivors, finally getting them in condition to hike the 40 miles to the headquarters camp, which was dubbed "Shangri-La" because of its remote location in the midst of primitive native tribes. Ultimately the entire group left the valley by glider.

A sound film was shown, depicting rescue operations and the contrast between civilized life at the rescue headquarters and life in the village of the New Guinea bushmen.

(*Please turn to page* 240)

# SIGNS OF THE TIMES



The group of products illustrated above is representative of the numerous parts we mold for many leading industrial plants and specialty manufacturers.

Synthetic Rubber—the modern basic material—points the way to greater efficiency and longer life of many parts and products.

Yesterday, in the design and material specifications for vital parts in your products, you were constantly plagued by the "bugs" of oil, friction, vibration, high or low temperatures, corrosion, abrasion, extreme pressures, dirt, moisture and other conditions difficult to control.

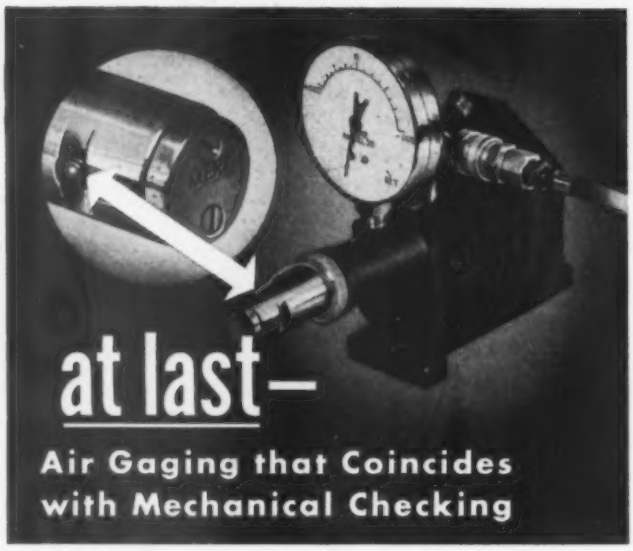
TODAY, synthetic rubber compounded with the exact properties needed to overcome or control these costly "bugs" can be precision-molded to the most exacting specifications.

For many purposes and applications, natural rubber remains the ideal material. Complementing each other, natural and synthetic rubber cover an increasingly comprehensive field of application.

We welcome your problems. Being specialists in synthetic and natural rubber compounding and molding, our recommendations are unbiased. When writing, include complete details, specifications or samples.

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## MOVIE AND TALK ON GLASS PRODUCTS, BUFFALO MEETING

Principal speaker at the January meeting of the Purchasing Agents Association of Buffalo, N. Y., was Larry Fisher of the Owens-Corning Fiberglas Company who detailed various glass products made by his company, and presented the company film "Watts in Glass".

There was also a brief talk by Charlie Sagar on the fifth and sixth sections of the "Standards and Principles of Purchasing Practice" code, dealing with the factors of honesty and truth in buying and selling, and the obligation to denounce all forms and manifestations of commercial bribery; and the obligation of the purchasing department to give prompt and courteous reception, when conditions permit, to all who call on a legitimate business mission. Mr. Sagar stressed the important role of the salesman in the procurement program.

During the business meeting, two new members were duly welcomed into the association, namely, Joseph Andrews of the John H. Knox Company of Buffalo, and J. Levant Williams of the McBride Steel Plate Construction Company, Batavia.

February 18th the Buffalo Association held its annual dinner dance at the Trap and Field Club, commencing with a social hour, dinner at 7:30, and dancing. This affair proved one of the highlights of the season.

At the association's February meeting, held at the Hotel Statler on the 8th, the speakers were Henry V. Wodtke, Donner-Hanna Coke Corp., who spoke on "Principles & Standards of Purchasing Practice," and Terence F. Dundon, Carrier Corporation, Syracuse, N. Y., whose subject was "By the Grace of God."

## "OLD FAMILIAR FACES" CINCINNATI MEETING

H. Wilson Lloyd, executive secretary, Association of American Playing Card Manufacturers, spoke on "Old Familiar Faces", at the February 15 meeting of the Purchasing Agents Association of Cincinnati, held at the Hotel Gibson.

## CANADIAN OIL IMPACT TOPIC AT TULSA ASSN. MEETING

A regular open meeting of the Purchasing Agents Association of Tulsa was held on Tuesday, February 14. The guest speaker was Gerald H. Westby, president, Seismograph Service Corp., Tulsa. Mr. Westby, who has studied the effect of the development of Canadian oil fields on petroleum supply in its larger aspects, spoke on "Canadian Oil and Its Impact on World Oil Economy".

Prior to the main meeting the Rockwell Mfg. Company, Nordstrom Valve Division, staged a demonstration of automatic lubrication of pressurized plug valves. Refreshments were served during the demonstration.

(*Please turn to page* 242)




## more powerful, more compact lighter weight drills

Here are the perfect answers to the rapidly growing demand for shorter, less bulky, high output industrial drills. They are Millers Falls new, close coupled No. 438 ⅜" Heavy Duty and No. 512 ½" Standard — two great new models with performance unexcelled by any other drills in their price class.

Incorporating the very latest in design and engineering, they pack tremendous power and endurance into remarkably small dimensions. Only 14" overall, they measure a bare 11" with spade handle removed. Thus they permit work in extremely close quarters . . . the difference between minutes and hours on many maintenance jobs.

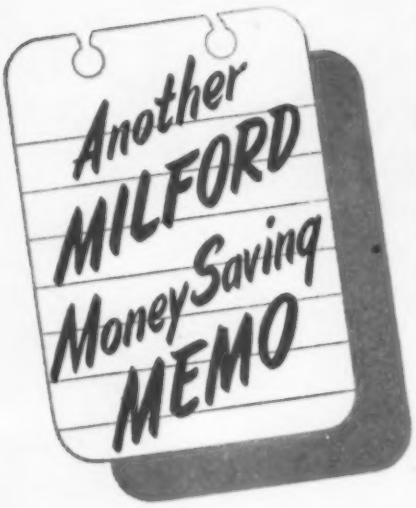
They are light, too — only 9½ lbs. — yet their powerful motors and full anti-friction bearing construction give them exceptional efficiency for continuous production work.

Whether you use portable electric drills for maintenance or production, you'll find it well worthwhile to try out these superlative new tools. They are truly outstanding performers. Write today for full details and name of your nearest distributor.

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**MILFORD**
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**BLADE LIFE**

**Depend on the MILFORD Flexible REZISTOR to deliver its full cutting life without premature breakage — to last up to ten times longer than standard steel blades. The Flexible REZISTOR is shatter-proof — no flying fragments to injure the operator. Exclusive MILFORD Easy-Starting Teeth start the cut on the first stroke at any angle — prevent jamming by keeping the cut free and clear of chips. Teeth are as hard as those of any power blade; the back is tough and flexible. See your nearby MILFORD Distributor about Flexible REZISTORS today!**

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**SOLD THROUGH SELECT INDUSTRIAL DISTRIBUTORS**


## STEEL OUTLOOK FOR 1950 DALLAS MEETING

F. A. Marsh, assistant to the vice president of the National Tube Company, Pittsburgh, Pa., spoke on the "Steel Outlook for 1950" at the January 12 meeting of the Purchasing Agents Association of Dallas, Texas, held in the Melrose hotel. Speaker at the Association's January 26 meeting was R. R. Ferguson, assistant trust officer, Republic National Bank, who discussed Trust and Estate matters.

## "COURT OF CLAIMS" ROCHESTER MEETING

"Court of Claims", with Perc Coomber as Moderator, was the discussion subject at the January 25th meeting of the Purchasing Agents Association of Rochester, Rochester Club, Rochester, N. Y. Many of the members participated in the discussion, which proved most interesting.

## SHORT CUTS TO OFFICE EFFICIENCY—SYRACUSE MEETING

Paper work detail was the theme of the January 25th meeting of the Purchasing Agents Association of Syracuse & Central New York, held in the Onandaga Hotel, Syracuse. The speaker was A. R. MacAlmond, Director of Apprenticeship and Training Supervisor, I. B. M., Endicott, N. Y., whose subject was "Short Cuts to Office Efficiency." Mr. MacAlmond gave actual demonstrations of improved procedure using various types of forms. In addition, Vice President J. M. Austin led a short snappy session on commodities.

## BUSINESS OUTLOOK PANEL 1950 LOUISVILLE ASSOCIATION

A "Business Outlook Panel for 1950" featured the January 17th meeting of the Purchasing Agents Association which was held in the Seelbach Hotel. The panel proved of more than usual interest, and consisted of a six-speaker presentation, each of whom was limited to ten minutes. The speakers were as follows:

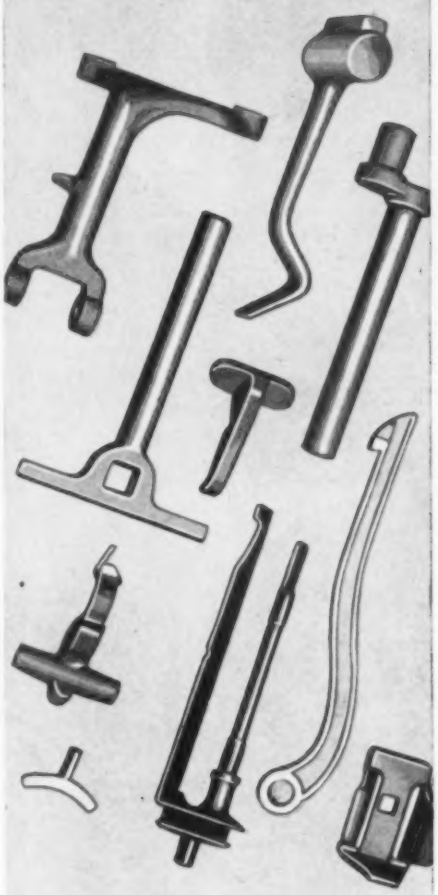
Manufacturer: Henry Heuser, vice president, Henry Vogt Machine Company; Banker: Richard H. Stout, Executive vice president, Bank of Louisville; Distributor: Paul Tafel, Tafel Electric & Supply Co.; Labor: J. C. Rumble, Director Employee Relations, Courier Journal and Louisville Times.

Transportation: Casper M. Ritchie, passenger representative, B. & O. Railroad; Economist: Dr. John M. Craf, University of Louisville.

(*Please turn to page* 244)


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***aid in production of***
**TEXTILES**



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**DROP FORGINGS • SPECIAL BOLTS, NUTS AND STUDS**

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**148 WEST RIVER STREET**
**PROVIDENCE 1, R. I.**
*Exclusive New England Representative for Cleveland Cap Screws*

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## COMMERCIAL PRINTING SUBJECT AT HAWAII ASSN. MEETING

A regular dinner meeting of the Purchasing Agents Association of Hawaii, held at the Smile Cafe, Honolulu, on January 26, featured a talk by Meiric K. Dutton, sales manager for the commercial printing division of the Advertiser Publishing Co. Ltd.

Mr. Dutton, who has an extensive background in printing, was assistant director of the printing and publishing division of the War Production Board in Washington during the war. He described the history and development of manuscripts and printing from the Roman Empire period to today, illustrating his talk with slides showing progress of the art. He placed on exhibit a display of printing prior to 1501, taken from his private collection. An original leaf from the Gutenberg Bible was also shown. The paper was still in excellent condition, attributed by Mr. Dutton to care in manufacture and careful selection of materials evident in those days.

Mr. Dutton also emphasized the advisability of keeping as much commercial printing as possible in the Islands. He said that local printers were capable of doing work comparable to that obtainable on the mainland, and at a competitive price. He said doing business at home would help provide employment and retain money to be put to work again.

## BETTER BUSINESS BUREAU SPEAKER AT PHILADELPHIA MEETING

Hugh Smith, General Manager, Better Business Bureau of Philadelphia, Inc., told about the activities of the Bureau, and how it aims to squelch "sharp" practices, at the February 9th meeting of the Purchasing Agents Assn. of Philadelphia, at the Bellevue-Stratford Hotel.

The Forum meeting preceding the regular dinner meeting, was featured by a showing of the General Electric Company's technicolor film "Clean Waters".

## VICE PRESIDENT WALTER McPHEE VISITS UTAH ASSOCIATION

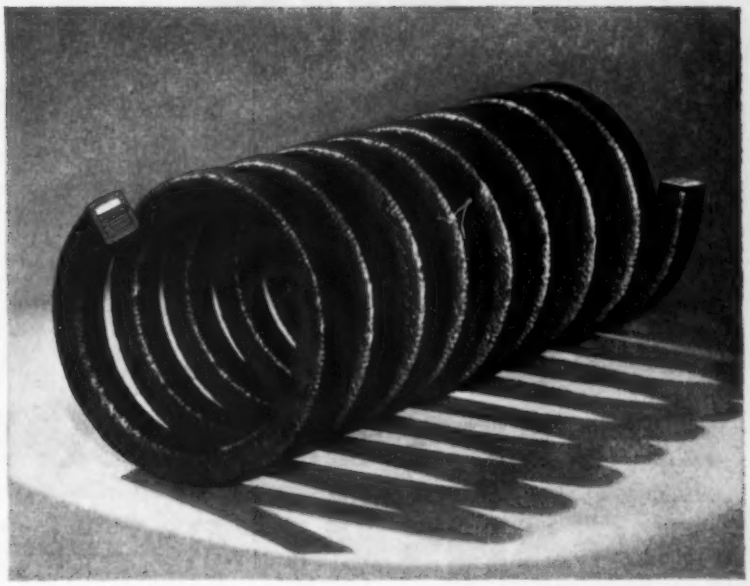
Walter N. McPhee, Vancouver, B. C., vice president of District No. 1 of the National Association, was a guest of the Purchasing Agents Association of Utah, addressing that body at its January 25th meeting at the Newhouse Hotel. Mr. McPhee, who was returning to his home from an National Association Executive Committee meeting in St. Louis, in the course of his address stated that "The Feeling among purchasing agents of the nation is that 1950 will be a good year." Mr. McPhee also addressed a luncheon meeting of the Salt Lake Advertising Club and Utah Association of Sales Executives.

(*Please turn to page* 246)



**QUESTION:**

*Which Garlock rod packing is recommended for general use against steam pressures up to 300 lbs.?*

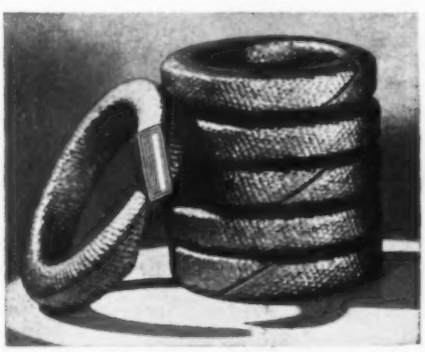


GARLOCK 150 spiral (illustrated) and GARLOCK 125 coil are made in 12½′ lengths and in packing sizes from ⅛″ to 1½″, advancing by sixteenths.

**ANSWER:** *Garlock 150*

Thousands of successful companies throughout the world have standardized on GARLOCK 150 for steam rods on equipment such as engines, compressors, pumps, etc.—in fact, for most steam services at pressures up to 300 pounds and temperatures up to 600° F.

You can depend on GARLOCK 150 for superior service because of its uniform, *quality controlled* construction. Start now to reduce maintenance and replacement costs on your rod packings—*standardize* on GARLOCK 150 for general steam service.



GARLOCK 200 Rings cut to any size

THE GARLOCK PACKING COMPANY
PALMYRA, NEW YORK

In Canada: The Garlock Packing Company of Canada Ltd., Montreal, Que.



# GARLOCK

PACKINGS, GASKETS AND OIL SEALS

# THIS LUBRICANT SAVES GEARS AND TRANSMISSIONS




—says
**AUTOMATIC WASHER COMPANY**
**Newton, Iowa**



*They write us.*

"We have used LUBRIPLATE in our washing machine transmissions since 1933. Our laboratory tests as well as field experience indicate that through the use of LUBRIPLATE we reduced the wear on the gears and prolonged the life of the transmission.

"The transmission is the heart of any washing machine, and the long life and trouble-free performance obtained by the use of LUBRIPLATE in the Automatic Washer transmission has been an important factor in the success of our product."

AUTOMATIC WASHER COMPANY
*F. Breckenridge*
Executive Vice-President

The use of LUBRIPLATE in a washing machine is a severe test. Bearings and parts are subjected to moisture, hot water, caustics and sometimes acids. A lubricant to give efficient lubrication under these conditions must be an unusual product.

LUBRIPLATE Lubricants reduce friction and wear, prevent rust and corrosion, save power. Because LUBRIPLATE Lubricants last longer, they are more economical to use.

Let us send you CASE HISTORIES of the use of LUBRIPLATE Lubricants in your industry. There is a LUBRIPLATE product best for every lubrication need. They range from the lightest fluids to the heaviest greases. They are different from any other lubricants you have ever used. Write today for further information.

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DEALERS EVERYWHERE . . . CONSULT YOUR CLASSIFIED TELEPHONE BOOK

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## COMPANY PLANNING AND THE BUYER—R.A.I.B.

An unusually interesting talk featured the February 15 meeting of the Rochester (N.Y.) Association of Industrial Buyers. The speaker was Larry Martin, assistant to the Manager of Camera Works, whose topic was "Company Planning as it Affects the Buyer's State of Mind." K. R. Chapman, Camera Works, Eastman Kodak Co., Rochester, N. Y., is secretary of the association.

## CANADIAN COUNCIL CELEBRATES SILVER ANNIVERSARY

The Canadian Council celebrates its silver anniversary this year, and the annual get-together of Canadian Purchasing Agents being planned for October in Toronto, is expected to be the best in the Council history.

A standard Past Presidents Pin was adopted at the recent meeting of the Council. Report was also made that a History of the Council being edited by Major J. R. Bell of Toronto will soon be ready for publication.

## "INDIA LOOKS BACK AND AHEAD" TORONTO ASSOCIATION

Gurpal Singh, Indian Government Trade Commissioner, Toronto, was one of the principal speakers at the "Members' Night" meeting of the Purchasing Agents Association of Toronto, held in the Royal York Hotel, February 8. The other speaker was Frank V. E. MacDonald, Robinson Cotton Mills Limited, who spoke on "History and Traditions of Canadian Navy."

## HOW TO BUY CHEMICALS METROPOLITAN BUYERS, NEW YORK

Guest speaker at the February 14 meeting of the Metropolitan Purchasers' Assistants Club, held at Midston House, New York, was Howard C. E. Johnson, managing editor of Chemical Industries magazine, whose subject was "How to Buy Chemicals." At Forum meeting preceding the regular dinner meeting, William Hargest, editor of American Exporter Magazine, spoke on purchasing commodities in Europe.

## BRITISH COLUMBIA MEMBERS TOUR RESEARCH LABORATORIES

The regular monthly dinner meeting of the Purchasing Agents Association of British Columbia was held at the Hotel Vancouver, Vancouver, B. C., January 10. Entertainment was provided by John Stead of the Traffic Department of the C. P. Ry.

(*Please turn to page 248*)

# Shipping COSTS GO DOWN when you use... gummed tape

*No other form of closure gives so much for so little*




**If you want to seal it right... use RED STREAK tape**




Don't guess—Investigate! Take time to follow your shipments with an eagle eye and a sales mind right to the point of opening. You'll find that your cartons, sealed with Red Streak Gummed Tape, reach their destinations in excellent shape because they are reinforced and sealed against moisture, dust, abuse and theft.

Here's where that sales angle comes in. The ultimate consumer, without effort, can open your taped carton with a knife or even a coin. Then watch him struggle and swear when opening any other type of closure. This customer satisfaction is worth investigating Red Streak Sealing Tapes today. Ask for Trial roll. No other form of closure gives so much for so little.

**The BROWN-BRIDGE MILLS, INC., TROY, OHIO, U.S.A.**

***Here's your Free sample roll...***
**Just send in the coupon and we'll send you a trial roll of Red Streak.**





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**Please send me trial roll of Red Streak Sealing Tape** and complete instructions on its proper use in making a perfect closure for my shipping cartons.

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**SEAL IT RIGHT WITH GUMMED TAPE**

**RAWHIDE** gives you *more* in soft hammers and mallets. And *Chicago* Rawhide gives you exceptional power and maximum protection. C/R hammers and mallets absorb shock, deliver powerful blows, protect finished surfaces and stand up under tough use. For hammers and mallets that never split, crumble or mushroom, always ask for *Chicago* Rawhide.




CHICAGO Rawhide MFG. CO.

1203 ELSTON AVENUE CHICAGO 22, ILLINOIS

*Other C/R maintenance products are: round, flat, twist belting; belt pins and lacings; gears, pinions, gear blanks; aprons, hand leathers; hydraulic packings.*

(*Continued from page* 246)

Co. who presented a film entitled "Klondyke Holiday", depicting a trip by steamer and rail from Vancouver to the Yukon and Alaska. This was followed by a colorful, spectacular film on the Calgary Stampede.

Members of the British Columbia Research Council were hosts to 48 purchasing agents on the campus of the University of British Columbia, January 18th. Following luncheon, the visitors were taken on a tour of the Council laboratories. They were also introduced to the processes of developing new products for manufacture by B. C. industry.

At the January meeting of the Vancouver Island Branch of the B. C. Association, Gerry Sharpe, City of Victoria, presented a film entitled "Let's Go Fishing." This film, which was prepared by the B. C. Government, depicts the story of salmon canning from the time the fish is spawned until the can is filled for delivery overseas.

## GOVERNMENT PROCEDURES IN PROCUREMENT—SOUTH BEND

John Sanger, director of purchases for U. S. Gypsum Company, Chicago, and a member of the Hoover Committee, spoke on Government Procurement, contrasting it to efficient business organizations, at the February dinner meeting of the Purchasing Agents Association held at the La Salle Hotel, South Bend, February 8th.

## LEADERSHIP OF EDUCATED MEN MONTREAL MEETING

Howard T. Lewis, Professor of Marketing, Harvard Graduate School of Business Administration, was guest speaker at the February 14th meeting of the Purchasing Agents Association of Montreal, held at the Mount Royal Hotel. His subject was "The Leadership of Educated Men." Distinguished guests included Dean Hall and Dr. Norris of Sir George Williams College, and in honor of the visit of Professor Lewis, a group of Harvard alumni. The association was also host to prize winning students of the courses conducted at Sir George Williams College by John Crawford, diplomas as well as monetary awards being presented to students showing outstanding merit.

Two new members were voted on at the meeting, namely C. G. Colis, General Purchasing Agent, J. L. E. Price & Co., Ltd., and Fernand Henault, Purchasing Manager and Secretary-Treasurer, Bedard Co. Ltd.

"Reports to Management" was subject discussed by the Panel Discussion

(*Please turn to page* 250)

# Know Your Plastics

## IT MAY MEAN BETTER AND FASTER PRODUCTION... AT LOWER COST!

When you investigate plastics for your new or revised product and package designs, think first of BAKELITE Plastics. The BAKELITE family of products includes those plastics that are in greatest demand. This gives you a wide selection, all from one supplier. The chances are that you will find the *one* plastic that is best suited to your production facilities, and also the plastic that gives best qualities to your finished product at lowest possible cost.

## *This message deals with* "BAKELITE" PHENOLIC MOLDING MATERIALS

### 1. GENERAL-PURPOSE PHENOLICS



These materials have widest utility, providing many desirable properties, preformability, ease of molding, and all-round serviceability at lowest cost. They come in blacks, browns, mottles, and made-to-order colors.

*Typical uses:* radio and television cabinets, bottle caps, wiring devices, automobile distributors.

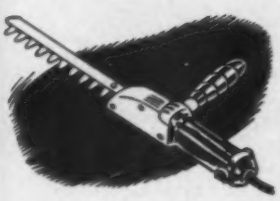
### 2. IMPROVED IMPACT-RESISTANT PHENOLICS



These materials provide the excellent appearance of the general-purpose phenolics, and up to twice their resistance to mechanical shock. They are readily preformed, but may require special feeding devices on machines.

*Typical uses:* washing machine agitators, instrument cases, meter housings.

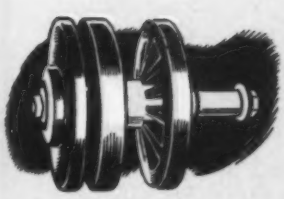
### 3. PREFORMABLE IMPACT-RESISTANT PHENOLICS



These materials are similar to the improved impact-resistant phenolics in properties and characteristics, but offer in addition preformability approaching that of the general-purpose materials.

*Typical uses:* heavy duty housings and bases.

### 4. MEDIUM IMPACT RESISTANT PHENOLICS



These materials provide four to six times greater resistance to mechanical shock than the general-purpose phenolics. They cannot be preformed on automatic equipment, but can be preformed by hand.

*Typical uses:* pulleys, machine tool handles, parts for oil-well drilling apparatus.

### 5. HIGH IMPACT-RESISTANT PHENOLICS



These materials provide eight to sixteen times greater resistance to mechanical shock than the general-purpose phenolics. They are preformable only by hand.

*Typical uses:* heavy-duty flashlight housings, instrument housings, industrial truck wheels.

### 6. HEAT-RESISTANT PHENOLICS



These materials were developed primarily for service at elevated temperatures ranging from 350 deg. F. to 400 deg. F. They are the most dimensionally stable of all the phenolics.

*Typical uses:* cooking utensil handles and knobs, toaster and waffle iron parts.

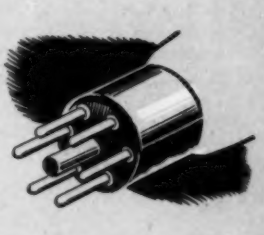
### 7. SHOCK- AND HEAT-RESISTANT PHENOLICS



These materials provide up to two and a half times the impact strength of the general-purpose phenolics, along with high heat resistance. Parts molded from these materials will withstand exposure to temperatures up to 400 deg. F.

*Typical uses:* commutator insulation, railway equipment parts.

### 8. "LOW-LOSS" INSULATING PHENOLICS



These materials have outstanding electrical insulating properties, notably low power factor, high dielectric strength, and high volume resistivity, in addition to low water absorption and dimensional stability.

*Typical uses:* coil forms, tube bases, capacitor casings, ignition parts.

### 9. CHEMICAL-RESISTANT PHENOLICS



Materials in this group, depending upon their varied formulations, have good resistance to water, acids, alkalies, alcohols, oils, greases, and other chemical products. Another desirable characteristic common to this group is minimum odor.

*Typical uses:* storage battery caps, sterilizers, milking equipment parts.

### 10. X-RAY SHIELDING PHENOLICS



These materials were developed primarily for x-ray equipment parts. A molded thickness of 5/16 in. is equivalent in shielding effect to 1 mm. thickness of lead.

*Typical uses:* x-ray equipment parts such as tube shields.

Additional detailed data is available on the various types and grades of BAKELITE Phenolic Molding Plastics. Write Department N-25, or call upon Bakelite technical representatives who are located in major industrial centers throughout the country.

Bakelite TRADE-MARK Phenolic PLASTICS

BAKELITE DIVISION UCC

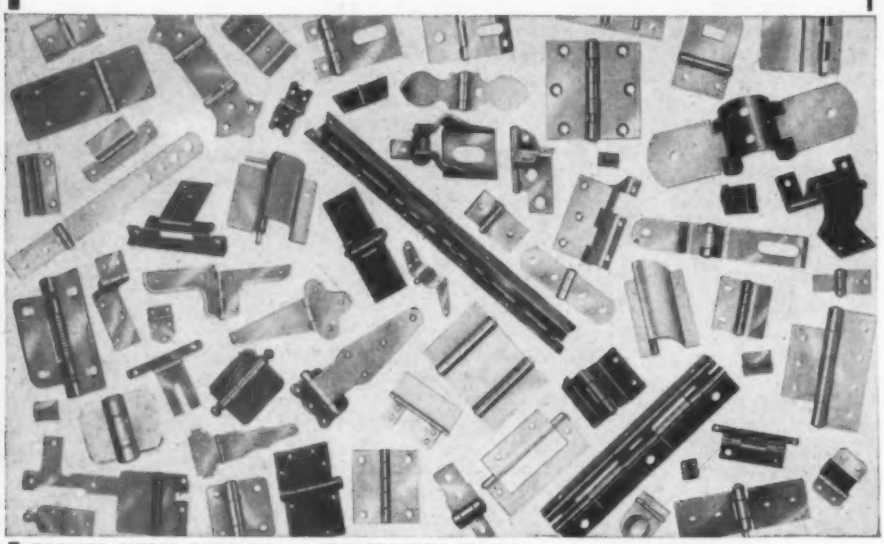
BAKELITE DIVISION, *Union Carbide and Carbon Corporation*, 30 East 42nd Street, New York 17, N.Y.

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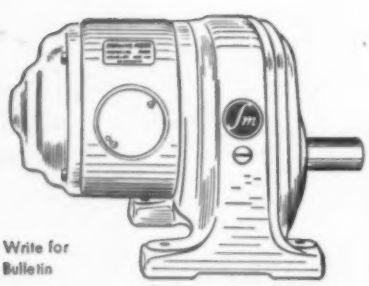
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(*Continued from page* 248)

Group preceding the regular meeting. The speakers were Ed Clarke of Canadian Industries Ltd., and Harold Nelson, Quebec North Shore Paper Co.

Tuesday February 21st, the St. George Curling Club extended its facilities to the members of the Association for their Annual Curling Bonspiel. The members had the use of the ice from 2:30 P.M. until 6:30 P.M., matches being arranged as the members arrived.

## ANNUAL DINNER DANCE TWIN CITY ASSOCIATION

The Twin City Association of Purchasing Agents held its Annual Informal Dinner Dance at the University Club, St. Paul, Saturday, February 18th. The committee in charge consisted of A. H. Carlson, chairman, C. A. Berg, R. C. Duncan, H. R. Woolsey and G. F. Whinnery. Tickets for the affair, which commenced with a buffet dinner, were $8.00 per couple.

At the association's February 8th meeting held at the St. Paul Athletic Club, E. L. Peterson, instructor in the School of Business at the University of Minnesota, spoke on "The Business Outlook for 1950."

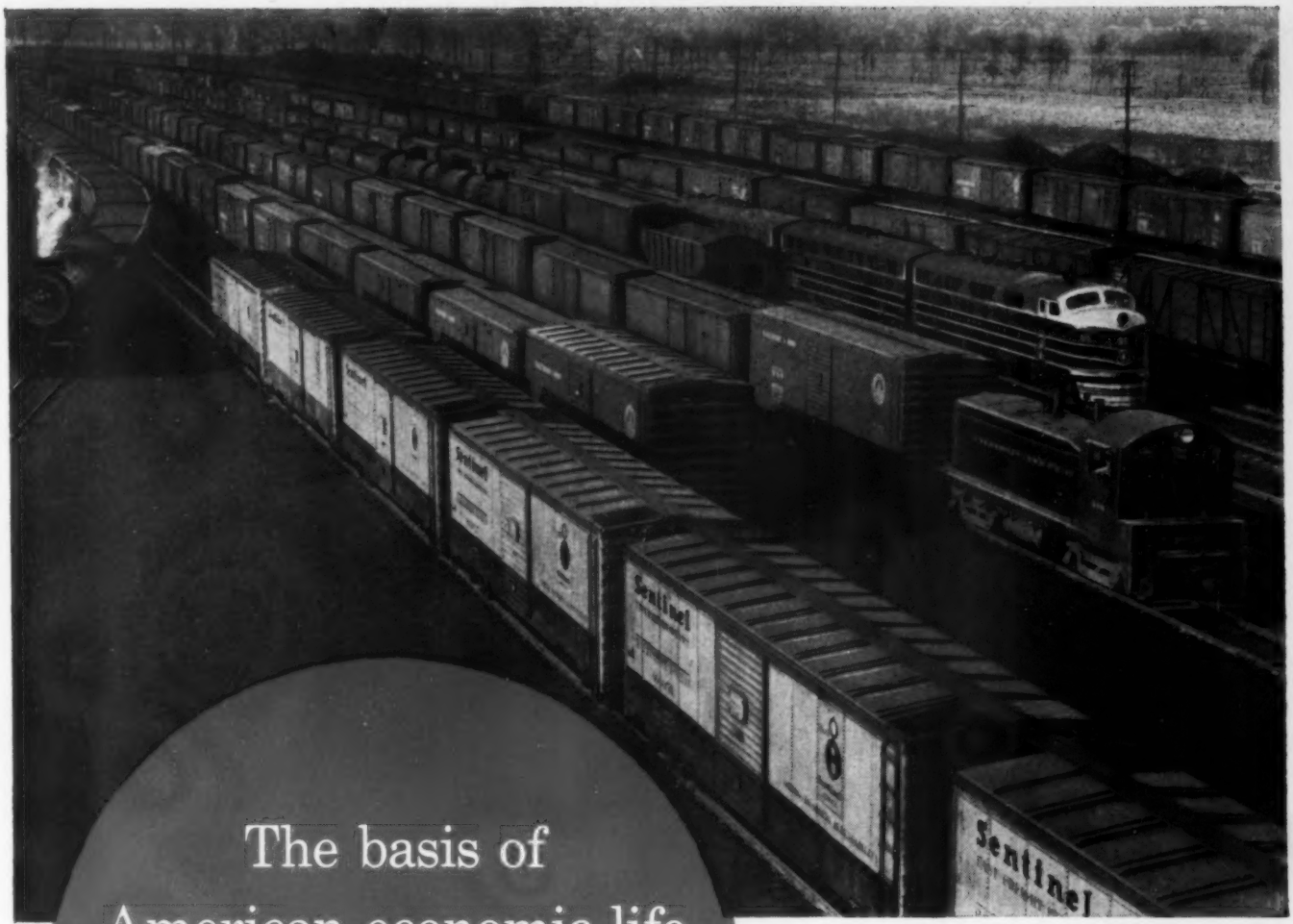
## "BUYING IN A BUYERS MARKET" ILGENFRITZ AT YOUNGSTOWN

C. A. Ilgenfritz, vice president in charge of purchases, United States Steel Corporation, addressed the Sales Managers Night meeting of the Youngstown District Purchasing Agents Association, on "Buying in a Buyer's Market". The members had their respective sales managers as guests at the well attended meeting which was held at the Youngstown Club. Tom Hudson of Cleveland, Sixth District Vice President, N.A.P.A., was among the guests.

## ROCHESTER ASSOCIATION ISSUES BULLETIN ON NAPA RELEASES

The Educational Committee of the Purchasing Agents Association of Rochester, Joseph L. Ernst, chairman, has commenced the issuance of a series of bulletins giving short reviews of Service Releases from the National Association. The subjects and titles of Releases are given. Members are instructed to write direct to George A. Renard, Executive Secretary, N. A. P. A., 11 Park Place New York, N. Y., for copies of complete releases that they may be interested in.

SEE CLASSIFIED SECTION
PAGE 306




The basis of
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*the only form of transportation which can and does handle anything, anywhere, anytime, in any quantity, for anyone.*

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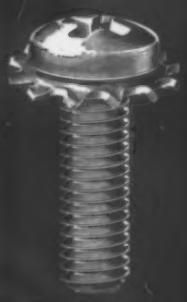
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## GENERAL ELECTRIC TO LAUNCH "More Power to America Special" Nine-Car Train of Exhibits

The "More Power To America Special", first train of its kind in industrial history, will be launched on a nationwide tour this spring by General Electric's Apparatus Department.

Exhibits of more than 2,000 electrical products, processes and techniques ranging from precise aircraft instruments to complex working models of steel mill, textile and other industry equipment, will be displayed throughout nine cars of the train.

C. H. Lang, Vice President in charge of sales for the company's Apparatus Department, said the train will visit the country's key industrial centers for inspection by utility and industrial executives and municipal leaders.

Since it is an industrial development enterprise, it will not be open to the general public, he added.

"'The More Power to America Special' represents one of our greatest efforts to meet current selling conditions in highly competitive markets." he declared, "and we look upon it as the most important single promotional undertaking in General Electric's industrial marketing history."

Years in the planning, the project has been a major activity in the company's Apparatus Advertising and Sales Promotion Divisions.

J. S. Smith, divisions manager, said the extensive series of related exhibits, filling nine cars of the train, will represent the best combined thinking of the Apparatus Department's research, engineering, manufacturing and sales personnel.

At the same time, he disclosed that a special group—the Apparatus Exhibit Train Division—was set up early last year as part of his organization with responsibility for preparation and operation of the train. This division is managed by C. P. Fisher, Jr.

The displays will portray the latest advances in power generation and methods and equipment for the profitable use of electricity throughout all industry. They have been designed especially for those who produce electric power and those who put it to work in industry and the community.

Included in the exhibits will be turbines of all types—steam, gas and mercury; equipment for transmitting and distributing electric power, and motors and controls engineered into combinations that can perform a wide variety of industrial operations.

Other displays will include precise measuring and recording instruments; new developments for community improvement, such as street lighting and sewage treatment equipment, and products which contribute to national security.

The train will be hauled by an Alco-G-E two unit, 4,000-hp, diesel-electric locomotive which itself will be part of the unusual series of displays. The cars are being built by the Pullman Standard Car Manufacturing Company.

(*Please turn to page* 254)

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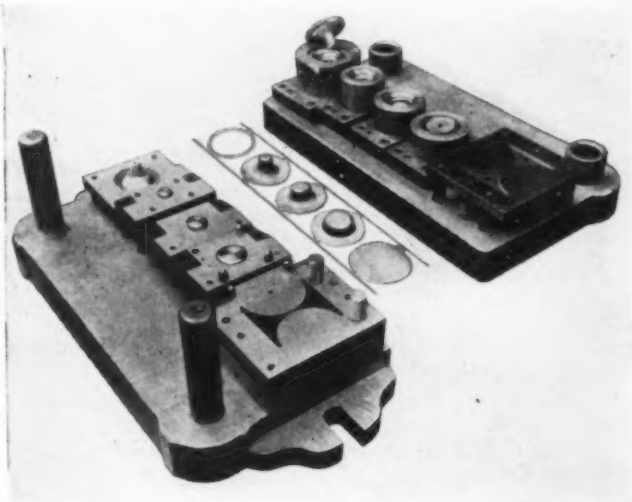




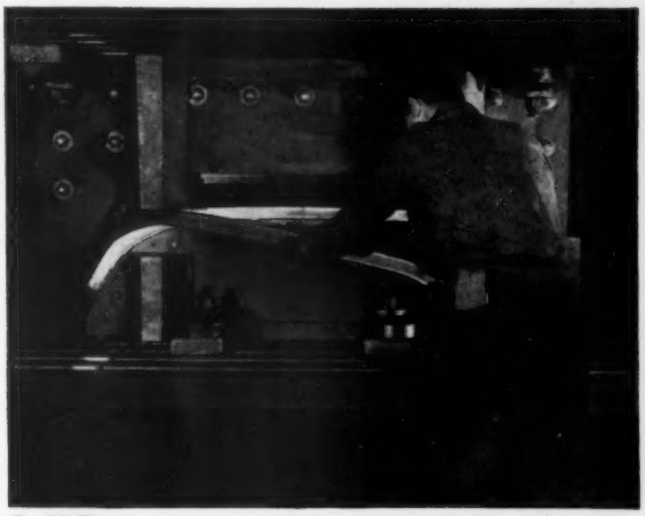
**BTR** the versatile oil-hardening grade, is ideal for cold-working dies such as this one which forms wheel housings. It is easy to machine and heat-treat.



**67 Chisel** used in the punch of this die which forms 0.185-in. sheet steel, has maximum impact properties for shock tools and master hobs.



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**A-H5** (5 pct chrome air-hardening) holds a durable cutting edge, has high resistance to distortion. This die trims a ragged edge from steel parts.

Whether you are interested in blanking and forming dies, high-speed cutters, shock tools, or plastic mold cavities—you can look to Bethlehem for a full range of fine tool steels. And a reminder . . . our technical staff will work with you all the way.

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## ETHYLENE GLYCOL IN AMPLE SUPPLY IN 1951

Ethylene Glycol, basic ingredient in the manufacture of non-volatile type antifreezes and in numerous other products, will be in plentiful supply, according to the Carbide and Carbon Chemicals Division of Union Carbide and Carbon Corporation. It is stated that huge new capacity scheduled for completion during the last quarter of this year will end the long postwar shortage, and that the total supply of Ethylene glycol by the end of the year should be enough to meet all industry needs in 1951. Government figures indicate that 1949 production approximated 420,000,000 pounds. It is estimated that by the beginning of 1951 the total production capacity of the industry will be increased by more than 50 percent.

## BASIC GUIDE TO FERROUS METALLURGY




Tempil° Corporation announces that a fourth printing of the Tempil° "Basic Guide to Ferrous Metallurgy" is again available.

This chart shows the working characteristics of steels in temperatures from minus 300°F to 2900°F. All the important temperature zones, including Hot-Working, Annealing, Normalizing, Stress Relieving, Carburizing and Preheating for welding are clearly defined. Temperature ranges are shown in nineteen colors approximating the characteristic hot-body radiant hues. At the right of the chart twenty three fundamental metallurgical terms are defined and explained. A diagram symbolizing the change in grain size with temperature is shown at the left.

This plastic-laminated wall chart measures 16¼ inches wide by 21 inches long. It can be cleaned easily and will last a lifetime. It provides a handy reference source and is available without charge to industrial executives who request it on company stationery, stating their position. Address Tempil° Corporation, 132 West 22nd Street, New York City 11.

(*Please turn to page 256*)


# *Users Like* THIS BUYERS' GUIDE




## here's what other buyers say . . .

Machinery Manufacturer. "We use this directory exclusively for locating sources of all types of material and machinery used in conjunction with our plant production, construction, and maintenance, and would be at a loss for a source of information without this directory." *Signed—Industrial Engineer*

Manufacturer of Railway Supplies. "We use the directory every day, and it is so completely compiled that very little time is lost in finding the necessary information." *Signed Chief Tool and Equipment Engineer*

Chemical Manufacturer. "We find this directory is our shortest cut for purchasing information . . . " *Signed—Plant Buyer*

Hardware Manufacturer. "We use this directory continuously and prefer it to all others due to its compactness and easy to find listings." *Signed—Purchasing Agent*

Seating Equipment Manufacturer. "We use this directory as the first source of information regarding suppliers as your publication is very handy, and the index is so arranged that it is a pleasure to look up the names of various sources of supply." *Signed—Vice-President*

**Direct quotations from signed company letters on file in our New York office.**

Thousands of buyers all through industry daily refer to the CONOVER-MAST PURCHASING DIRECTORY. They find that it is the easiest and quickest way to locate sources of equipment, products, and supplies used in industry.

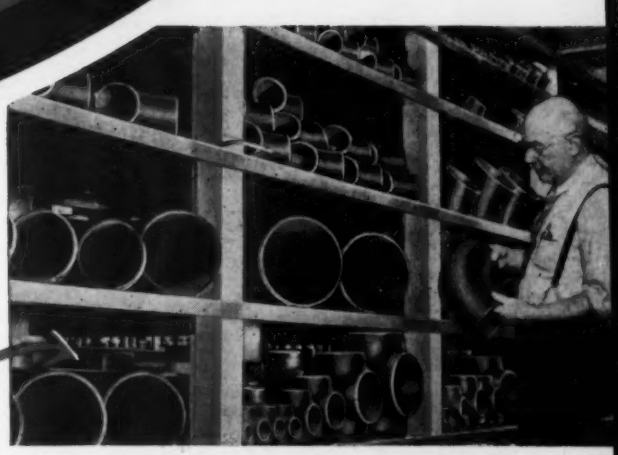
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## BOOK DESCRIBES CURRENT RESEARCH BY COLLEGES, UNIVERSITIES

Over 4000 current college and university research projects in engineering subjects, representing expenditures of over $35,000,000, are listed in 1949 "Review of Current Research" published by the Engineering College Research Council of the American Society for Engineering Education. Entries in the book from 82 educational institutions describe policies, personnel, research expenditures, and give the titles of all engineering research studies currently active. Copies of the book, paper bound, 180 pages, are available at $1.75 each, postpaid, from F. M. Dawson, chairman, in care of the College of Engineering, State University of Iowa, Iowa City, Iowa.

## "THE MIRACLE OF CALCIUM CARBIDE"

The National Carbide Corporation announces the publication of a 16-page booklet entitled "The Miracle of Calcium Carbide". The booklet traces the history of calcium carbide from the time of its discovery as a commercial possibility over 50 years ago, through the developments of manufacture and the current and potential usage of commercial calcium carbide, acetylene gas, and calcium hydrate residue. Copies are available on request from National Carbide Corporation, Room 1656, 60 East 42nd St., New York 17, N. Y.

## COMPREHENSIVE CATALOG ON CARBIDE AND CAST ALLOY PRODUCTS

The Vascoloy-Ramet Corporation, 800 Market St., Waukegan, Ill., manufacturers of carbide and Tantung cast alloy tools announces the completion of what is described as the most comprehensive catalog ever assembled on carbide and cast alloy products. The new catalog (VR-440), 92 pages, is visually indexed and color tabbed for easy reference. It is designed as a complete buyers' guide, and contains sufficient information to warrant its use as a standard book of reference for the carbide industry.

A partial list of products covered includes carbide tools, blanks, wire drawing dies, drills, end mills, blades, Tantung castings, technical data, and new line of vertical and horizontal tool holders.

Of special interest to carbide users is the establishment of ten standard grades, so tabulated with various machine operations and types of materials that selection of the proper grade for a specific application is simplified.

Advanced designs, new products and an extremely wide choice of standard, non-standard and special tools and blanks make the new issue an outstanding catalog in the carbide tool industry.

Copies available on request.

(*Please turn to page* 258)


**Stuart's ThredKuT**




D. A. STUART'S THREDKUT straight, or in rich blend, provides fine finish on tough, stringy materials because its high sulphur content gives it excellent anti-weld characteristics.

In long dilutions THREDKUT delivers long tool life and outstanding performance at low cost on free cutting, high speed operations.

THREDKUT'S exceptionally broad range of usefulness makes it cost less than "cheaper" products in the majority of cases and often eliminates the need for several different types of oils. When it comes to *performance* on the jobs within its range, *none can best it!* Write for details and literature.

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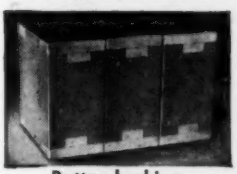
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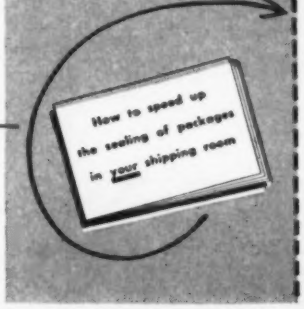
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Keystone is prepared to help solve any of your industrial wire problems. If special treatment is called for, Keystone's metallurgical research and testing facilities are available to supply the answers. We welcome your inquiry.

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*Special Analysis Wire, Setting New Standards of Performance*

## SOCIETY OF LUBRICATION ENGINEERS ANNUAL AT DETROIT

The Fifth Annual Convention of the American Society of Lubrication Engineers will be held at Hotel Statler, Detroit, April 10, 11 and 12; annual lubrication exhibit of the Society will be held at the same time. Keynote of the convention will be "Preventive Maintenance through Proper Lubrication." Prominent among the 21 speakers who will address the meeting are Dr. W. E. Campbell of Bell Telephone Laboratories whose subject will be "Lubrication of Electrical Contacts", and Dr. E. M. Kipp of the Aluminum Company of America who will discuss "Multi-purpose Lubricants".

## PERMANENT-MAGNET LATCH HOLDS DOORS IN PLACE

Leco-Latch is the name of a magnetic latch for use on cupboard and other doors introduced by the Laboratory Equipment Corporation, St. Joseph, Mich. It consists of a small but powerful permanent



**Leco-Latch permanent magnet door latch**

magnet, a small plate made of special steel, and the necessary screws. There are no moving parts, no springs. There is nothing to get out of order. Doors open easily without snap, noise or jerk, though they are held in place firmly. One of its principle benefits is keeping warped and sagging doors closed. The magnet will last a life-time.

## TUBE TURNS, INC. ISSUES NEW 262-PAGE CATALOG

Publication of new catalog, No. 211, 262 pages, is announced by Tube Turns, Inc., Louisville 1, Ky. It provides complete dimensional data, weights and prices on all Tube-Turn welding fittings and flanges. The Engineering Section contains practical, illustrated information covering welding fittings and flanges under varying conditions of temperature, pressure, location, and materials processes, and discusses their use in many different types of piping systems. A section is devoted to welding fittings and flanges in special metals and alloys. The Technical Section contains valuable data on Properties of Pipe; Rating of Pipe Fittings, and Flanges; Line Expansion and Flexibility; Support and Anchorage of Piping; and Flow of Fluids. The catalog is comprehensively illustrated with line drawings and photographs of parts.

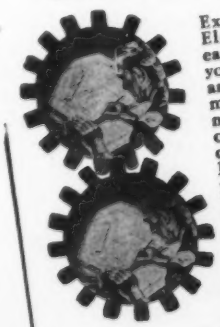
Each copy distributed is registered in the name of the holder, who will be regularly supplied with supplemental data and literature as issued.

*(Please turn to page 260)*




# Sound to the core . . . to guard your reputation

**Emerson-Electric's unique *Twin-gineering* SERVICE solves your power problems**



Experienced Emerson-Electric Engineers are eager to collaborate with your own staff in designing and providing the proper motor application to your new or improved appliance or equipment. Such collaboration—TWIN-GINEERING we call it—can save you costly engineering "back-tracking," and may suggest short cuts or improvements of great competitive benefit to your product. Write us today . . . there is no charge for this service.

Do your products enjoy the ready acceptance they deserve?

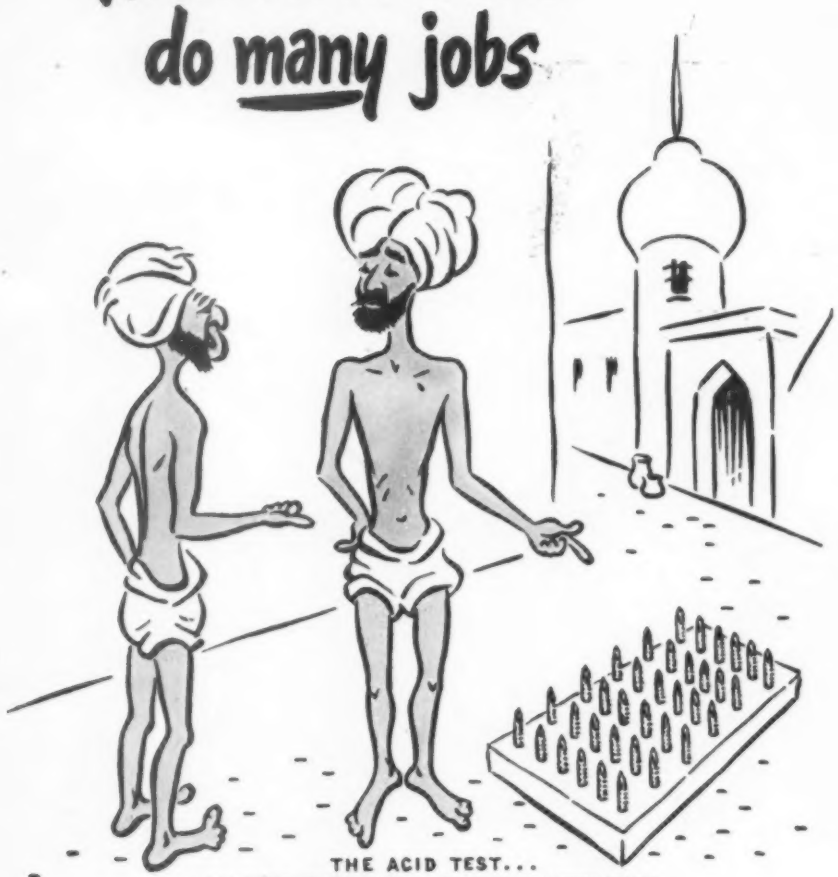
The products you are producing today will determine your reputation in future years. Satisfactory service over a period of time is the decisive test. And so it is with Emerson-Electric Motors . . . sixty years of motor-building know-how have earned for Emerson-Electric the enviable reputation of consistently producing motors with sound engineering and design principles, sound construction—motors that are literally "sound to the core".

Scores of America's most reputable manufacturers recognize that their products are known by the service they perform. For this reason their products are powered by Emerson-Electric Motors . . . thus assured of years of dependable service. Your inquiry is invited as to how Emerson-Electric can guard the reputation of your product with its complete line of motors, 1/20 to 5 h.p.

**THE EMERSON ELECTRIC MFG. CO.**
ST. LOUIS 21, MO.

**EMERSON ELECTRIC**
MOTORS • FANS APPLIANCES

# Threadwell Tools do many jobs



THE ACID TEST...
THEY'RE *THREADWELL* SPIRAL POINTED TAPS

# they can do your tough ones

For the answer you've been looking for, call in your nearest Threadwell Distributor. You can get his name as well as complete information by mailing the coupon below.

**THREADWELL TAP & DIE CO., Greenfield, Mass.**

**Send me free Bulletins checked below**

Name _____

Position _____

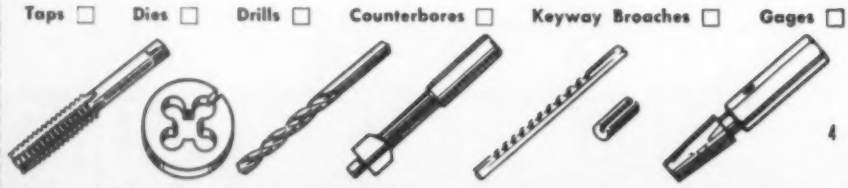
Company _____

Street address _____

City _____ Zone ___ State _____

Threadwell

Taps ☐ Dies ☐ Drills ☐ Counterbores ☐ Keyway Broaches ☐ Gages ☐




## NATIONAL PLASTICS EXPOSITION CHICAGO, MARCH 28-31

A huge display of more than 100 case histories of the industrial and commercial uses of plastics will feature the National Plastics Exposition in Chicago's Navy Pier March 28-31. It will include both static and animated exhibits. It is stated that exhibit space already contracted for exceeds that of the October 1948 New York show. Each case history will show the product before and after the application of plastics, will illustrate each use of plastics in it and will describe the effects on weight, appearance, costs, manufacturing procedures, and merchandising.

## CORRUGATED STEEL STACKING BOX WITH HINGED DOOR



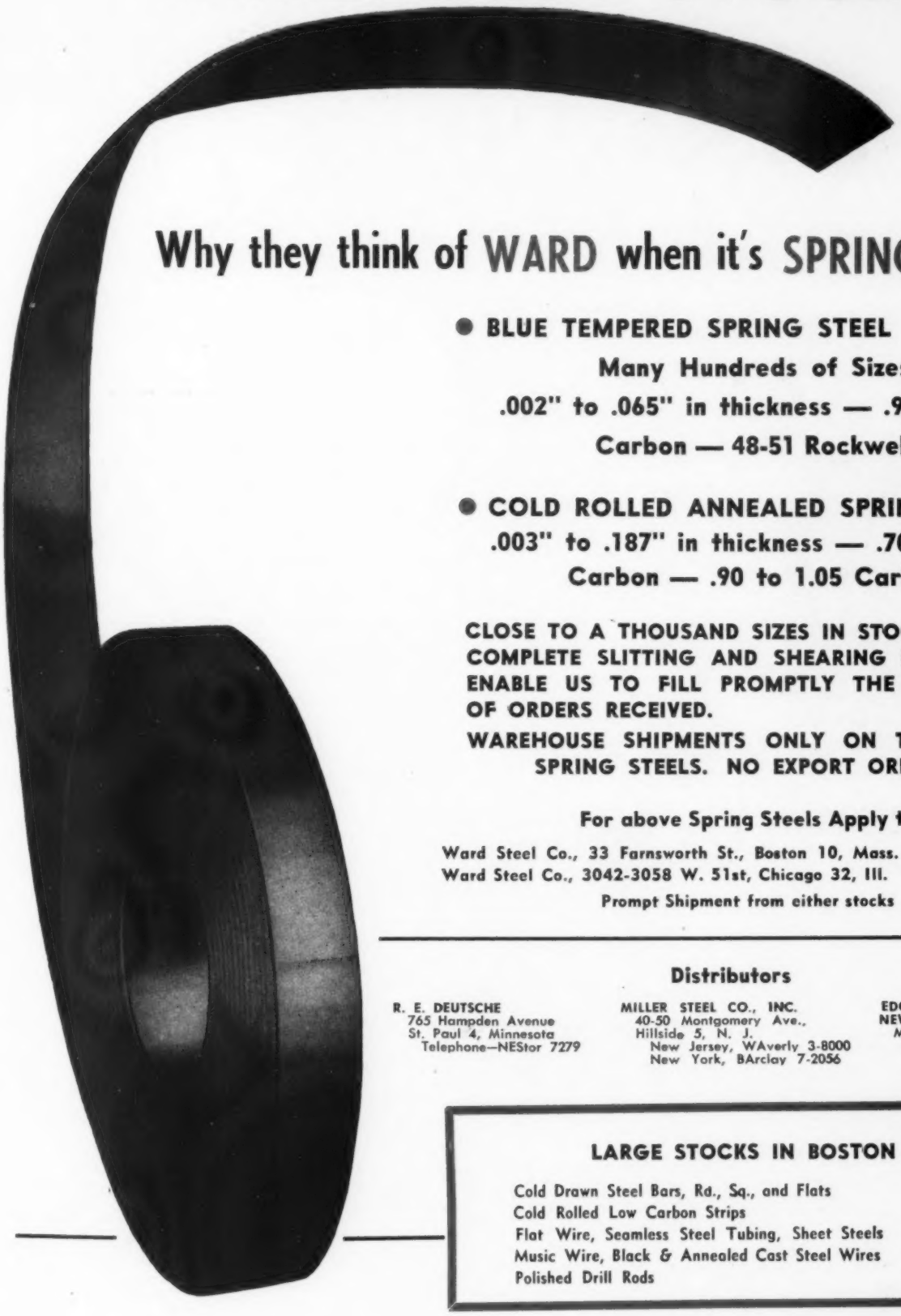
A new corrugated steel stacking box with a chain operated hinged door is announced by Palmer-Shile Company, 12625 Mansfield Ave., Detroit 27, Michigan, manufacturers of Material Handling Equipment.

One of the convenient uses of the box is on a steel stand. The door may be opened to any set angle by means of the chain, simplifying parts disposal by standing or sitting workmen. The door also eliminates the necessity of removing tiered boxes when it is desired to dispose of parts in boxes not at the top. The boxes are built to dimensions and load capacity specified by the customer, including underneath clearance. Crane lugs, stacking brackets, and color of paint desired may also be specified.

## PACKAGING EXPOSITION AT CHICAGO, APRIL 24-27

The American Management Association announces that its 19th National Packaging Exposition will be held in the Navy Pier, Chicago, April 24-27. The exposition is styled the annual market place for machines, equipment, materials, supplies and services for packaging, packing and shipping in all industries. It is estimated that 140,000 square feet of display space will be used, nearly 25% more than last year. The A.M.A.'s annual Conference on Packaging, Packing and Shipping will be held concurrently with the exposition. The conference is open to both members and nonmembers of A.M.A., and the exposition is open to representatives of all kinds of business.

# WAREHOUSE STOCK



## Why they think of WARD when it's SPRING STEEL

- **BLUE TEMPERED SPRING STEEL**
  **Many Hundreds of Sizes**
  **.002" to .065" in thickness — .95 to 105**
  **Carbon — 48-51 Rockwell**

- **COLD ROLLED ANNEALED SPRING STEEL**
  **.003" to .187" in thickness — .70 to .80**
  **Carbon — .90 to 1.05 Carbon**

**CLOSE TO A THOUSAND SIZES IN STOCK — AND COMPLETE SLITTING AND SHEARING EQUIPMENT ENABLE US TO FILL PROMPTLY THE MAJORITY OF ORDERS RECEIVED.**

**WAREHOUSE SHIPMENTS ONLY ON THE ABOVE SPRING STEELS. NO EXPORT ORDERS.**

**For above Spring Steels Apply to**

**Ward Steel Co., 33 Farnsworth St., Boston 10, Mass.** **LIb 2-2270**
**Ward Steel Co., 3042-3058 W. 51st, Chicago 32, Ill.** **Grovehill 6-2600**
**Prompt Shipment from either stocks**

**Distributors**

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765 Hampden Avenue
St. Paul 4, Minnesota
Telephone—NEStor 7279

**MILLER STEEL CO., INC.**
40-50 Montgomery Ave.,
Hillside 5, N. J.
New Jersey, WAverly 3-8000
New York, BArclay 7-2056

**EDGCOMB STEEL OF NEW ENGLAND, INC.**
Milford, Connecticut
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**LARGE STOCKS IN BOSTON**

Cold Drawn Steel Bars, Rd., Sq., and Flats
Cold Rolled Low Carbon Strips
Flat Wire, Seamless Steel Tubing, Sheet Steels
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Providence, R. I., GASpee 8573
Chicago, Ill., Grovehill 6-2600

# WARD STEEL CO.

**33 FARNSWORTH ST.** **BOSTON 10, MASS.**


*Want Additional Product Information? See Page 19.*

# PERSONALITIES *in the* NEWS

**Martin W. Valuck** has been promoted to the position of Purchasing Agent of the Sealed Power Corporation, Muske-



Martin W. Valuck

gon, Mich. He succeeds Roy S. Harvey, who is retiring. Mr. Valuck started with the Accuralite Division of the company in 1936, in the engineering department. Later he handled some of the purchasing functions of this division. In 1940, when Mr. Harvey was appointed Purchasing Agent, Mr. Valuck was appointed his assistant.

**Robert Barit** has been appointed Purchasing Agent of the Hudson Motor Car Co., Detroit, Mich., according to an announcement by G. W. Munger, Vice President in Charge of Purchasing. Mr. Barit has been with the company for more than ten years. During the past two years he has been in charge of the buying unit and the specification unit of purchasing.

**Quintin T. Dickinson** has been named Manager of the new Coal Tar Chemicals Department, Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J. The department was established to handle all purchases and sales of coal tar chemicals and their by-products. W. C. Harmon, Jr., has been named Manager of Purchasing of the division.

Mr. Dickinson obtained a B.S. in chemical engineering from the University of Pennsylvania in 1917. He joined the Calco chemical sales department in 1928 and transferred to the purchasing department in 1934. He became General Purchasing Agent in 1942. Mr. Harmon is a graduate of the Sheffield Scientific School of Yale University. He joined the Calco organization in 1929 and since 1932 has been associated with the sales department.

**John R. Guynes** has been promoted from buyer to Assistant Purchasing Agent of the Magnolia Petroleum Company, Dallas, Tex. Mr. Guynes, who joined the company in 1923, succeeds B. T. Adkerson who has retired.

**F. Albert Hayes** has been appointed Vice President for Purchasing, of the Bigelow-Sanford Carpet Company, Inc., New York, N. Y., according to an announce-



F. Albert Hayes

ment by J. D. Wise, President. Mr. Mr. Hayes, a past president of the National Association of Purchasing Agents, has served as Director of Purchasing for the company since 1946.

**S. E. Hartten** has been named Director of Purchases and Sales of Vulcan Detinning Co., Sewaren, N. J.

**Francis A. Wandell** has been appointed Director of Purchases and Inventory Control of the J. T. Baker Chemical Company, Phillipsburg, N. J. Robert H. Meier has been named Purchasing Agent of the company.

**W. S. Floyd** has been appointed Manager of Purchasing, San Francisco, for Shell Oil Company, New York, N. Y., according to an announcement by W. H. Bratches, Purchasing-Stores General Manager. A University of California civil engineering graduate in 1928, Mr. Floyd began with the Shell engineering department in 1929. After a transfer to San Francisco purchasing-stores in 1934, and to Los Angeles in 1944 as assistant manager, he returned to San Francisco as assistant manager in 1947.

**Frank D. Lortscher,** Signal Oil and Gas Co., Los Angeles, Calif., has been appointed Manager of the company's newly organized Purchases and Stores Department. Mr. Lortscher, who has been with the company for more than 22 years, is chairman of the Oil Company Buyers Group of the National Association of Purchasing Agents.

**Harold R. Soler** has been promoted to Purchasing Agent of the Hartford Electric Light Co., Hartford, Conn. He succeeds William S. Barker, who has been named Assistant General Manager, a newly created position.



Harold R. Soler

Mr. Barker joined the company in 1917 after graduating from Rensselaer Polytechnic Institute as an electrical engineer. He has served in the purchasing department as clerk, chief clerk and as-

(*Please turn to page* 264)

# ANNOUNCING A NEW SUNOCO WAX WITH PROPERTIES NEVER BEFORE OBTAINABLE

**Every industrial user of paraffinic wax offered new economy and improved-product possibilities by Sunoco Wax 5512. Unequalled characteristics made possible by precision controls in Sun's new wax plant...among the largest and most advanced in the world.**

Sunoco Wax 5512 is a hard, dry, high-gloss, high-melt-point product. It is a closely fractionated, paraffinic wax from which all low-melt-point elements have been removed by revolutionary techniques of precision control at Sun's new multi-million-dollar plant. Sunoco Wax 5512 possesses a combination of physical properties never before commercially obtainable.

***For Example:***

Sunoco Wax 5512 shows no blocking or marring *even at 135°F or more* when subjected to accepted blocking temperature tests.

Sunoco Wax 5512 has extremely low A.S.T.M. D5-25 Penetration Values for a paraffinic wax. This is dramatically demonstrated when the test is run at *increasingly elevated temperatures.*

Other characteristics of Sunoco Wax 5512 are equally outstanding. In fact, many of its remarkable properties can only be appreciated by subjecting it to tests relevant to the user's special requirements.

**For complete specifications and test samples, write today. Send as much information as you care to divulge concerning your wax use, so that our technologists can supply the kind of additional information which will be most helpful to you. Address your inquiry to Dept. PU-3, Sun Oil Company, Philadelphia 3, Pa.**

**Sunoco Wax 5512 is available for immediate shipment in tank cars, and in 50-pound cartons containing five slabs**

**SUN PETROLEUM PRODUCTS** SUNOCO®

sistant purchasing agent. He was appointed Purchasing Agent in 1929.

Mr. Soler graduated from Rensselaer Polytechnic Institute in 1925, as an elec-



William S. Barker

trical engineer, and joined the company immediately thereafter. He has served in the purchasing department in numerous capacities.

**W. H. Bobear** has been appointed Manager of Purchasing for the General Electric Company's Large Apparatus Divisions, Schenectady, N. Y. Mr. Bobear joined the company in 1916. He served in the order and stores department in Schenectady, and was in charge of these departments in the Baltimore and Philadelphia Works until 1942 when he was appointed assistant production manager at Schenectady. In 1944 he became supervisor of the Order and Stores Division and two years later was named purchasing agent for the Apparatus Department. He assumed the post of manager of purchasing for that department in 1948.

**Felix M. McFarland** has been named City Purchasing Agent of West Chicago, Ill.

**John F. Ward** has been appointed City Purchasing Agent of Chicago, Ill., by Mayor Martin Kennelly, to succeed the late Leo A. Murray.

Mr. Ward was Deputy City Purchasing Agent from the time the Bureau of Central Purchases began operating on January 1, 1948, until Mr. Murray's death, when he became acting purchasing agent. Before coming to the city government, Mr. Ward was assistant county purchasing agent from 1943 through 1947, and an administrative analyst for the Civic Federation. He was elected president of the National Institute of Governmental Purchasing last October.

**Charles Hoff,** chief business officer of the University of Omaha, Omaha, Neb., has been promoted to Vice President in Charge of Business Management. Mr. Hoff is a past president of both the National Association of Educational Buyers, and the Omaha Association of Purchasing Agents.

**Cecil E. Bales,** formerly Vice President of The Ironton Fire Brick Company, Ironton, O., has been elected President of the company. Mr. Bales was a member of the Tri-State Purchasing Agents Association for a number of years and served as its president and national director.

**Robert C. Stockton** has been appointed General Traffic Manager of Stewart-Warner Corporation, Chicago, Ill., according to an announcement by R. F. Stiles, Director of Purchases.

**J. W. Hinchcliffe** has been appointed Director of Materiel of Northrop Aircraft, Inc., Hawthorne, Calif.

**J. V. Necas,** Director of Purchasing of P. Lorillard Company, New York, N. Y., has been elected a director of the company.

## AMONG THE COMPANIES YOU BUY FROM

**Cincinnati, O.**—Philip Carey Mfg. Co. Martin V. Coffey, formerly sales manager of the company's Miami-Cabinet division, has been appointed general sales manager.

**Detroit, Mich.**—Illinois Tool Works. Hollis H. Mosher has been named sales engineer in the company's sales office here at 2895 E. Grand Boulevard.

**Kansas City, Mo.**—Link-Belt Company. A factory branch store and warehouse has been opened here at 2630 Holmes Street.

**Nashua, N. H.**—Rollins Engine Co. Charles I. Geddes has been named sales engineer for New England.

**New York, N. Y.**—The Texas, Company. J. M. Gregory has been appointed sales promotion manager and W. J. Ray becomes manager of the company's national sales division.

**Chicago, Ill.**—A. B. Dick Company. John G. Beadle has been appointed vice-president heading the sales division. Mr. Beadle has had 22 years service with the company.

**Pittsburgh, Pa.**—The National Supply Company. William VanVleet has been appointed eastern division manager.

**Long Island City, N. Y.**—Mine Safety Appliances Company. A new and larger warehouse to serve eastern New York state and all of Connecticut, has been opened here at 5-45 Forty-Ninth Avenue.

**St. Louis, Mo.** — Minneapolis-Honeywell Regulator Company and its Brown Instruments Division have moved into a new office building here at 4354 Olive Street.

**Chicago, Ill.** — Scovill Manufacturing Company. A new Brass Mill products depot containing expanded sales office facilities has been built here at 4105 West Chicago Avenue. The company has completed its seventy-ninth year of direct representation in Chicago.

**Newark, N. J.**—The Taft-Peirce Manufacturing Company of Woonsocket, R. I. George M. Pearse and Company of 1060 Broad Street, Newark, New Jersey has been appointed as manufacturer's representatives in the New Jersey and Metropolitan New York area for the Taft-Peirce line of gages, gage blocks, small tools, and tool room and inspection equipment. The Pearse organization will handle sales and service on all Taft-Peirce standard products except machine tools.

**Chicago, Ill.**—Templeton, Kenly and Company. P. H. McManus has been appointed general sales manager. Mr. McManus has been with the company for 31 years, and was previously assistant general sales manager.

**Dallas, Tex.**—Graybar Electric Company. The southwestern district of the company, with headquarters here, has been divided into two separate units. A newly created district is the Gulf Coast district, with headquarters at Houston. Both districts will continue to operate under supervision of G. T. Marchmont.

**Riverside, N. J.**—Riverside Metal Company. Fred M. Shelley, Jr. has been appointed general sales manager, and Alfred G. Dennison assistant general sales



Fred M. Shelley, Jr.

manager. Mr. Shelley has been with Riverside for 30 years, and to the time of his present appointment was managing the company's regional sales office in Newark, N. J. George Peterson, Jr. has been named manager of the company's new special products division.

**New York, N. Y.**—Worthington Pump and Machinery Corporation. A. M. Boehm has been appointed eastern manager, engine division. He will handle sales negotiations for gas and oil pipe lines equipment and oil and gas engines for all services.

**Coshocton, O.**—General Electric Company. J. Russell Watt has been appointed sales manager of industrial laminates and insulating materials for the company's Chemical Department.

(*Please turn to page* 266)

SEAL DIRT OUT · GREASE IN

BALL IN THE TOP

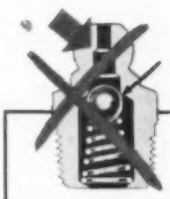



**Lincoln**
**BULLNECK***
**Kleenseal***
LUBRICATING EQUIPMENT
**GREASE FITTINGS**

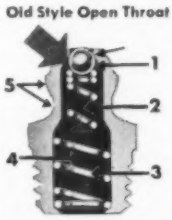
## PROTECT BEARINGS
## REDUCE MAINTENANCE

**All these exclusive advantages at no extra cost...** Lincoln Kleenseal* Bullneck Fittings provide positive bearing protection because the surface Ball-Check in the fitting head, flush with the contact opening, prevents dirt and grit from entering the bearing. They are designed to permit contact by all commercial hydraulic couplers. Kleenseal Bullneck fittings admit more lubricant flow with less pressure than any other hydraulic or push type fitting. They permit standardization on one all-purpose type fitting without making obsolete any present couplers or grease guns.

*Tradename Registered



Old Style Open Throat




Bullneck Sealed Throat

### CONSTRUCTION FEATURES

1. **Flush Ball Check** — Head can be wiped clean without forcing dirt into fitting and into bearing.
2. **Large Grease Passage** — The larger internal diameter permits greater flow of lubricant.
3. **Special Spring Design** — Spring cannot be compressed to restrict flow of the heaviest lubricants.
4. **Greater Flow** — Less Resistance — The larger internal area requires less pressure to clear the fitting.
5. **Sturdier Construction** — Enlarged neck size and projecting locking pad protect against damage and wear.

*Standardize on the Modern Fitting with the BALL IN THE TOP*



Kleenseal Bullneck Fittings Are Available in the Complete Range of Types and Thread Sizes.
*Write for Bulletin 708-1 (Actual Size Drawings)*

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LINCOLN LUBRICATING EQUIPMENT • • •

**LINCOLN ENGINEERING COMPANY**
5783 Natural Bridge Ave., St. Louis 20, Mo.

SEE OUR CATALOG IN SWEET'S

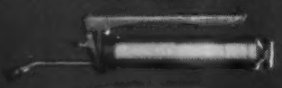
*Select the Lubrication System to meet your requirements from*
**LINCOLN'S COMPLETE LINE:**



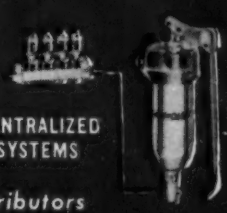
HEAVY DUTY POWER OPERATED DRUM PUMPS



BUCKET PUMPS



HAND GUNS



CENTRALIZED SYSTEMS

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# WITTEK
## HOSE CLAMPS
*For Any*
## Hose Connection




**Whatever your hose connection requirement, there is a Wittek Hose Clamp to meet the need. Wittek Hose Clamps are made in many sizes and styles, and of various materials such as stainless steel, regular steel or brass. Each type of Wittek Hose Clamp is of proven design which assures dependable leakproof hose connection.**

**See Your Supplier or Write Direct**

**WITTEK**
**MANUFACTURING CO.**
**4330 W. 24th Place, Chicago 23, Ill.**
*Dependability in Hose Clamps for Over a Quarter of a Century*


**Houston, Tex.**—American Brake Shoe Company. A sales office has been opened here at 2620 Maury Street. William C. George has been appointed sales engineer and will represent the American Manganese Steel, Electro-Alloys and National Bearing Divisions in the new office.

**Los Angeles, Calif**—Brown & Sharpe Mfg. Co. A new office has been opened here at 3040 East Olympic Boulevard, under the direction of Thomas F. MacLaren, representative. Machine tools will be carried in stock in Los Angeles. Small tools and cutters will be sold through industrial distributors as formerly.

**Dallas, Tex.**—Bridgeport Brass Company. A new district sales office has been opened here in the Reserve Life Building. It will be under the direction of B. M. Neilson, and will service Arkansas, Louisiana and Texas.

## INDUSTRIAL DEVELOPMENTS

**Sheffield Tube Corporation,** New London, Conn., is now celebrating its 100th business year. It originated as a toothpaste



**Top: L. Tracy Sheffield, president; W. Kyle Sheffield and Thomas C. Sheffield, vice-presidents**

business in 1850 under the guidance of Dr. W. W. Sheffield. The company was the first to put toothpaste in tubes, and at the turn of the century a tube manufacturing plant was established. Greatly expanded, this plant operates as The Sheffield Tube Corp., under the management of the third and fourth generations of the original family, making varied tubes for cosmetics, medicinals, lubricants, liquid cements and other items.

**George K. Garrett Company,** Philadelphia, Pa., has begun an expansion program with the construction of a new plant at Elwood City, Pa. The plant will produce flat washers of all types, small and medium stampings, and complete assemblies.

**The Round Chain & Mfg. Co.,** with offices at 646 West Lake St., Chicago, Ill., has been formed as a new Round Associate Chain Company. It will be directly affiliated with the five other Round Chain plants, which are located in various parts of the country.

**Taylor Forge & Pipe Works,** Chicago, Ill., has formed Taylor Forge & Pipe Works of Canada, Ltd. The subsidiary will be located at Hamilton, Ontario.

**Behr-Manning Corporation,** Division of Norton Company, Troy, N. Y., has announced the election of Elmer C. Schacht as president. He succeeds Francis E. Gallagher, who is chairman of the board



**Elmer C. Schacht**

of directors. Other officers elected include Henry M. Elliott, first vice-president; John O. Amstuz, vice-president; Harold S. Turner, controller and assistant; Terence A. Cordner, assistant controller; William I. Clark, Jr., secretary; and Miss H. Vermaidel Teeling, assistant secretary.

**Vulcan Electric Company,** Danvers, Mass., has purchased the business of Jackson Electro Corporation, New York, N. Y., manufacturer of soldering irons. Manufacturing operations will be transferred to the Vulcan plant in Danvers, but in the field the Jackson name will be maintained.

**Riverside Metal Company,** Riverside, N. J., has completed expansion of its mill facilities so that it can now supply nickel-silver, and phosphor bronze alloys in small wire sizes and large diameter rods. It can supply wire as small as .005 inches in diameter and rods as large as 4¾".

**Robert Gair Company Inc.,** New York, N. Y., has announced that its Connecticut Cartons Division hereafter will be known as the Folding Carton Department of the Thames River Division. The Thames River Division is at Montville, Conn.

**Carnegie-Illinois Steel Corporation** has announced a new program designed to increase the production of cold-reduced sheets by about 200,000 tons a year in its Chicago district. The increased production will be obtained without major additions to plant facilities at the Gary Sheet and Tin mill where the sheets will be rolled. The program will be completed in about 15 months.

**Brad Foote Gear Works, Inc.,** Chicago, Ill, has purchased the good will of the American Gear and Manufacturing Company, Chicago.

(*Please turn to page* 268)

# GLOBE

## Offers You a Wide Choice in Stainless Steel Tubes



**GLOBE** *Seamless* STAINLESS STEEL TUBES



**GLOWELD** *Welded* STAINLESS STEEL TUBES

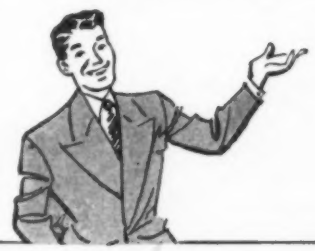


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**For Your Product or Process . . . One of These Types May Offer You the Most In . . .**

- **Resistance to Corrosion**
- **Strength at High Temperatures**
- **Resistance to Oxidation at High Temperatures**
- **Ease of Fabrication**



**TYPICAL ANALYSES (In Per Cents)**

| Type No. | Chromium | Nickel | Carbon | Other Elements |
|---|---|---|---|---|
| 301 | 16-18 | 6- 8 | Over .08-.20 | |
| 302 | 17-19 | 8-10 | Over .08-.20 | |
| 302B | 17-19 | 8-10 | Over .08-.20 | Si 2-3 |
| 304 | 18-20 | 8-11 | .08 max. | |
| 308 | 19-21 | 10-12 | .08 max. | |
| 309 | 22-24 | 12-15 | .20 max. | |
| 309S | 22-26 | 12-15 | .08 max. | |
| 309Cb | 22-24 | 12-15 | .10 max. | Cb 8xC min. |
| 310 | 24-26 | 19-22 | .25 max. | |
| 314 | 23-26 | 19-22 | .25 max. | Si 1.5-3 |
| 316 | 16-18 | 11-14 | .08 max. | Mo 2-3 |
| 316Cb | 16-18 | 10-14 | .08 max. | Mo 2-3; Cb 8xC min. |
| 317 | 18-20 | 11-14 | .08 max. | Mo 3-4 |
| 321 | 17-20 | 9-13 | .08 max. | Ti 5xC min. |
| 329 | 23-28 | 2.5-5 | .20 max. | Mo 1-2 |
| 330 | 14-16 | 33-36 | .15 max. | |
| 347 | 17-20 | 9-13 | .08 max. | Cb 10 x C min. |
| 403 | 11.5-13 | | .15 max. | |
| 405 | 11.5-13.5 | | .08 max. | Al .10-.30 |
| 410 | 11.5-13.5 | | .15 max. | |
| 416 | 12-14 | | .15 max. | P, S, Se min. .07 Zr, Mo max. .60 |
| 430 | 14-18 | | .12 max. | |
| 443 | 18-23 | | .20 max. | Cu .90-1.25 |
| 446 | 23-30 | | .20 max. | $N_2$ .10-.25 |
| Inconel* | 11-15 | 70 min. | | Fe 10 max. |
| Nichrome** | 20 | 80 | | |

**Registered U. S. Trade-Mark.* ***Trade-Mark Reg. U. S. Pat. Off.-D-H Co.*

CHROMIUM, nickel, carbon, manganese, silicon, molybdenum, columbium, titanium — these and other elements, combined in various percentages, are the ingredients of stainless steel. Because varying analyses have widely varying service characteristics, Globe recommends a specific analysis or type only after carefully studying your particular problem. In addition to the above 26 standard types, *Globe also furnishes special analyses.*

You benefit from Globe's years of experience and research on stainless steel tubing problems. You are invited to take advantage of the extensive testing facilities in Globe's chemical, physical, and metallurgical laboratories and its staff of scientists and engineers.

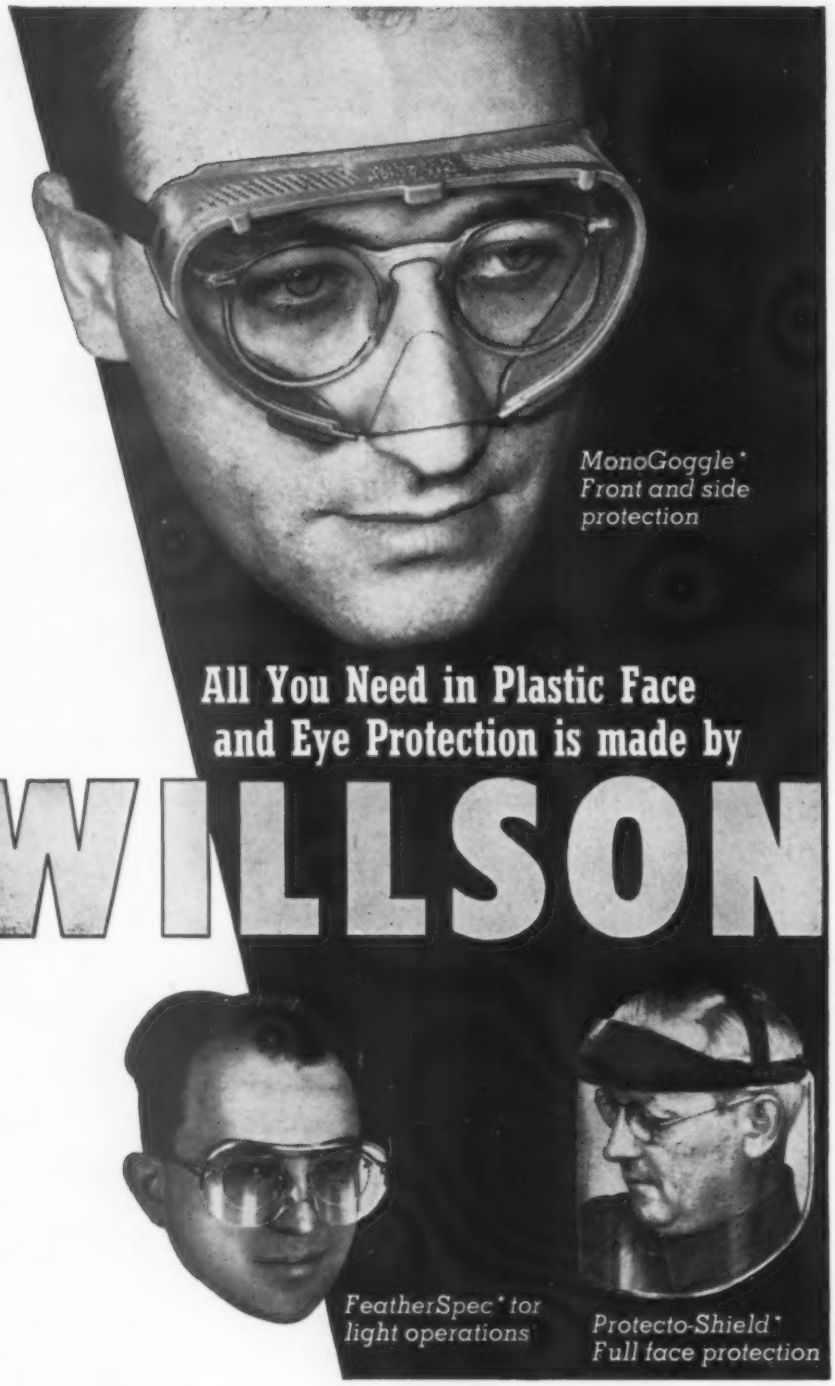
GLOBE STEEL TUBES CO., Milwaukee 4, Wisconsin



Write for Bulletin 301 — Corrosion and Heat Resisting Steel Analyses Chart — a valuable reference tabulation of stainless steel analyses as produced by various manufacturers.




Seamless Stainless Steel Tubes—Gloweld Welded Stainless Steel Tubes—Carbon-Alloy-Seamless Steel Tubes — Globeiron Seamless High Purity Ingot Iron Tubes — Globe Welding Fittings




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Dependable Products Since 1870

These three types of protective devices, all with one-piece plastic lenses or visors and each with many variations, give you a wide selection to meet specific requirements of work hazards. Their light weight and comfortable fit insure workers' willingness to wear them for long hours on the job. Complete information on plastic protection and other eye and respiratory safety equipment is available in the new WILLSON catalog. Get your copy from our nearest distributor or write direct to WILLSON PRODUCTS, INC., 221 Washington Street, Reading, Pa.




*T.M. Reg. U.S. Pat. Off.


**Lewis Welding & Engineering Corp.**, Bedford, O., has purchased the Euclid, O. plant and equipment of the Joy Manufacturing Company. The new plant will be organized as a separate manufacturing entity and will do machine work and machine assembly as the Breckenridge Machine Division of Lewis Welding & Engineering Corp.

**Princeton Paint Laboratories**, Princeton, N. J., has licensed United Chromium Inc., New York, N. Y. to manufacture and distribute a new organic coating, Aviation Primer #10. It will be marketed under the trade name Unichrome Primer A.P. No. 10.

**Simpson Optical Manufacturing Co.**, Chicago, Ill., has completed extensive plant alterations to accommodate an increase of nearly 100% in lens coating, aluminizing and silvering facilities.

**Stolper Steel Products Corporation**, Milwaukee, Wis., plans to relocate in a new factory at Menomonee Falls, Wis. The new plant, including a one-story factory building of 130,000 square feet on a 38-acre site, is expected to be completed before the end of 1950.

**Kupfrian Manufacturing Company** has been established by Wilbur J. Kupfrian, who has withdrawn as part owner and engineering director of the Elliott Manufacturing Company, Binghamton, N. Y. The new organization is successor to the special products division of the parent firm, and will maintain offices at the same address. It will make flexible-shaft couplings or remote controls, and wire shielding.

**The Ohio Electric Mfg. Co.**, Cleveland, O., has purchased the nail making machine business of Black Industries, Inc., Cleveland.

**The Electric Railway Improvement Company** has changed its name to Erico Products, Inc. Address of the company, 2070 E. 61st Place, Cleveland, O., remains unchanged.

**Better Finishes and Coatings, Inc.**, Newark, N. J., is now shipping chromic acid flake, technical grade, produced in newly installed electro-chemical equipment at its Newark plant.

**Rivett Lathe & Grinder, Inc.**, Boston, Mass., has purchased the entire line of Gerotor air and hydraulic valves, cylinders and hydraulic power units from Gerotor May Corp., Baltimore, Md. All manufacturing and selling operations are being transferred to Boston.

**Standard Steel Corporation**, Los Angeles, Calif., fabricators of heavy steel plate, have purchased outright the Drying Machinery Division of Hersey Manufacturing Company, Boston, Mass. Standard Steel has for many years manufactured drying and dehydration equipment for chemicals, fertilizers and by-products.

(*Please turn to page* 270)




# Servilinen

## CUTS WINTER COLD CASUALTIES

● Clean soft cotton towels dry thoroughly . . . eliminate health hazard of half-dry hands when employees wash.

● Servilinen services every type of business with uniforms, table linen and towels effectively, inexpensively. No investment necessary. Call the Servilinen supplier in your city today. His service will save you time and money.

This campaign is being sponsored in the interests of the linen supply industry by

**M. SNOWER & COMPANY**

Division of Opelika Textile Mills, Inc., furnishers of washable service apparel and towels to the linen supply industry.

**Servilinen**

**The Quality Service Obtainable from Members of LINEN SUPPLY ASSOCIATION OF AMERICA**








**Scully-Jones and Company,** Chicago, Ill., has announced a new distribution policy for its Style B tap chucks and drill drivers. These tools are now available to all jobbers, mill supply houses and other resale outlets handling a line of drills and taps. This policy does not extend to any other Scully-Jones products.

**Champion Glove Corporation,** Brooklyn, N. Y., is a new company formed to manufacture plastic coated industrial work gloves. Louis K. Braunston is president.

**Minnesota Mining & Manufacturing Co.,** St. Paul, Minn. has announced plans to build a $3,000,000 office building adjacent to its present administration building.

**Joseph T. Ryerson & Son, Inc.,** has begun construction of a new and larger steel service plant and office building in Cincinnati, O. It is expected that the new plant will be completed by fall.

**Westinghouse Electric Corporation** has appointed Burt S. Burke as manager of the lighting division, at Cleveland, O. With Westinghouse 27 years, Mr. Burke was previously manager of the company's switchgear distribution apparatus department at East Pittsburgh, Pa.

**The Industrial Department of the American Arch Company, Inc.,** New York, N. Y., has been purchased by the M. H. Detrick Company American Arch Division, with offices in the Oliver Building, Pittsburgh, Pa.

**Frederic B. Stevens, Inc.,** and The Udylite Corporation have announced an agreement contemplating the merger of the former into the latter. It is expected that the matter will be submitted to Udylite stockholders at the annual meeting in April.

**Houghton Laboratories, Inc.,** Olean, N. Y., formerly industrial consultant on protective coatings and corrosion control, has entered the manufacturing field. It will make a series of anti-corrosive metal primers and surface coatings, as well as a new plastic material called Hysol 6000, used for protecting steel storage tanks, pipes, furniture, and various types of equipment.

**The Ohio Electric Mfg. Co.,** Cleveland, O., has purchased all assets except plant of the Wright Hoist Division of the Lisbon Hoist and Crane Company, Lisbon, O. The "Bob-Cat" hoist will be manufactured in the Ohio Electric plant in Cleveland, with full production scheduled for early April.

**Metalwash Machinery Corporation,** formerly of Irvington, N. J., has opened a new plant on U. S. Route 1, at North Avenue, in Elizabeth, N. J.

**Williams and Hussey Machine Company,** purchaser of the O. K. Tool Company, Shelton, Conn., has announced that all manufacturing at Shelton has ceased and will henceforth be conducted at Wilton, N. H.

# PEQUOT MILLS says:

# SYLVANIA TRIPLE-LIFE FLUORESCENT LAMPS

Naumkeag Steam Cotton Company

Salem, Massachusetts
Owners and Operators

Pequot Mills

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"...are a welcome bonus in the battle to keep costs down"

J. M. Shackelford
Purchasing Agent



PEQUOT SHEETS AND PILLOW CASES

The makers of the famous Pequot sheets and pillow cases join the many other manufacturers of high quality products in hailing the superiority of Sylvania's new outstanding product—the amazing Triple-Life Fluorescent Lamps!

You, too, can realize remarkable savings in lamp costs—in addition to the savings in the cost of labor for replacement. You can actually save as much as 66⅔% when you buy the Sylvania lamps that *last 3 times as long as previously rated.* No extra cost! Last 3 years in plants and offices, 2½ years in stores, 6 years in schools, 7 years in homes! Write today: Sylvania Electric Products Inc., Advertising Dept. L-5004, 500 Fifth Ave., New York 18, N. Y.

# SYLVANIA ELECTRIC

FLUORESCENT LAMPS, FIXTURES, SIGN TUBING, WIRING DEVICES; LIGHT BULBS; PHOTOLAMPS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES



*Want Additional Product Information? See Page 19.*

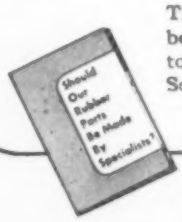



This rubber diaphragm is a vital part of an improved "packless" valve recently developed by a leading valve manufacturer. It provides an air-tight seal against any leakage of gases or volatile, hard-to-hold, corrosive fluids. The diaphragm is strong enough to withstand high pressures and yet sufficiently flexible for easy opening and closing.

Manufacturing specifications are exacting. In addition to heat, chemical, and abrasion resistance, the rubber diaphragms must endure test flexings equivalent to many years of normal operation.

Continental met—and exceeded—the required standards. To pre-test the diaphragms before delivery, Continental designed and built a special flexing machine. The successful solution of this problem is typical of the "technical service in rubber" offered by Continental.

When *you* need better engineered rubber parts, why not enlist the assistance of specialists?




This case history booklet has been a helpful "thought starter" to many users of rubber products. Send for your copy *today*.

**CONTINENTAL**
**RUBBER WORKS**
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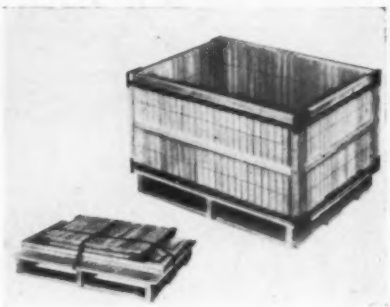
BRANCHES

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| Boston, Mass. | Detroit, Mich. | Memphis, Tenn. | St. Louis, Mo. |
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| Chicago, Ill. | Indianapolis, Ind. | New York, N. Y. | Syracuse, N. Y. |
| Cincinnati, Ohio | Kansas City, Mo. | Philadelphia, Pa. | Wilmington, N. C. |
| Cleveland, Ohio | Los Angeles, Calif. | Pittsburgh, Pa. | |


## G. L. NORDSTROM NAMED SECRETARY NATL. PAPER BOX MFRS. ASSN.

Gustav L. Nordstrom has been elected secretary of the National Paper Box Manufacturers Association, Broad and Arch Streets, Philadelphia 7, Pa. Mr. Nordstrom has been assistant secretary of the association since May 1948.

## PARTS HANDLING CONTAINERS OF WOVEN WOOD & WIRE CONSTRUCTION



The accompanying illustration shows a collapsible wooden box known as Collapsible No. 2 made by the G. B. Lewis Co., Watertown, Wis., which can be quickly disassembled for a space and freight saving return unit. Side and end panels are of woven wood and wire. They are built up around a skid or pallet-type bottom, and rigidly banded with universally available steel straps. Interlocking corner clamps of 11 gauge steel secure the panels and the bottom. All wood parts are made of tough Northern elm.

## ALUMINUM GAS LINE BEING BUILT

The first aluminum gas line to be installed in the nation will be an all-welded line that will extend underground approximately 1.8 miles from the main trunk line of the Alabama-Tennessee Natural Gas Co. to the Listerhill, Alabama, plant of Reynolds Metals Co. The line consists of extruded (not drawn) type 63S-T6 aluminum alloy pipe measuring 8⅝" outside diameter; walls ¼" thick. The line is designed for a working pressure of 22 lbs. psi and a bursting pressure of 1750 lbs. psi. The pipe is in 40-foot lengths, joined by straight butt welds. After welding, the entire length of the line including joints will be wrapped by applying cold No-Oxid pipe wrap—except a single 40 foot section which will be left unwrapped to determine if wrapping is necessary. This section will be by-passed with another length of pipe which will be wrapped. Valves will disconnect the unwrapped section from the line and allow the gas to flow through the bypass. It is planned to dig up the unwrapped section of the line at six-month intervals for examination.

(*Please turn to page 274*)




IT'S NEW
IT'S VALUABLE
IT'S **FREE!**

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***MOST COMPLETE DECAL MANUAL PUBLISHED ON PRODUCT IDENTIFICATION***

THE YEAR'S

# "BEST SELLER" on Decal Nameplates

Meyercord's "Mark-It" Manual hits the "Best Seller" lists! In just nine months this authoritative guide has become a "bible" on product identification. Leading manufacturers call it the most complete Manual on Decal nameplates ever published. In 20, full-color pages, it tells how America's foremost products are Decal-marked by Meyercord—to save time, labor and material—to provide colorful brand recognition . . . to give a product permanent identification that *sells*, with nameplate Decals.

Write for your FREE copy today. See how hundreds of durable, washable Meyercord Decals are used as trademarks, instructions, charts, diagrams—in all sizes, colors, designs. Learn how easily they are applied at production line speed on metal, glass, wood, china, plastics, leather, rubber, crinkle—curved, flat or flexible surfaces. Find out how and where Meyercord Decals are used for lasting adhesion despite vibration, acid, fumes, hard use and wear. Executives! For your FREE copy, write Dept. 10-3

***Executives!* DECAL NAME PLATES ARE YOUR "BEST SELLER" ON DURABLE GOODS TOO!**

*Meyercord Decals are 24-hour a day, year-in, year-out salesmen! In full color, they sell for the life of your product! Application is fast, easy, economical. Investigate Meyercord Decals today. Learn how they can* SAVE *and* SELL*—for you!*

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World's Largest Decal Manufacturer
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STAONAL®
marking crayons



STAONALS are waterproof and permanent, or washable and removable, as required. Black, white and colors.

No. 1 and 1 CT SPECIAL—For checking
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*SEND TODAY for FREE catalog of industrial crayons to Dept. P50.*

**BINNEY & SMITH CO.**
41 East 42nd St., New York 17, N. Y.






**NO FINER LIQUID SOAPS!**

**. . . FOR THE MONEY YOU HAVE TO SPEND**

**BALMA** THE PREMIUM SOAP

DOLGE is proud of its reputation for producing the very *highest quality* liquid soaps, and invites comparison on *any* basis—clarity, brilliance, pleasant aroma, rich lather. In addition, DOLGE soaps are non-irritating, will not turn cloudy or develop rancid odors *even upon prolonged storage.*

**VELVA** MEDIUM-PRICED

Whether you select BALMA (comparable to the most expensively perfumed cake soaps), modestly-priced VELVA or low-cost KLEENWELL, you'll receive TIP-TOP VALUE PER DOLLAR SPENT!

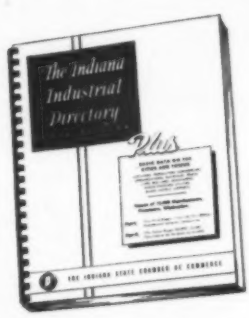
**KLEENWELL** LOW-PRICED

*Dispensers available in several types*

Write for literature—have your DOLGE Service Man demonstrate these outstanding liquid soaps.

**The C. B. DOLGE Co.**
WESTPORT, CONNECTICUT






**Are You Interested in Indiana?**

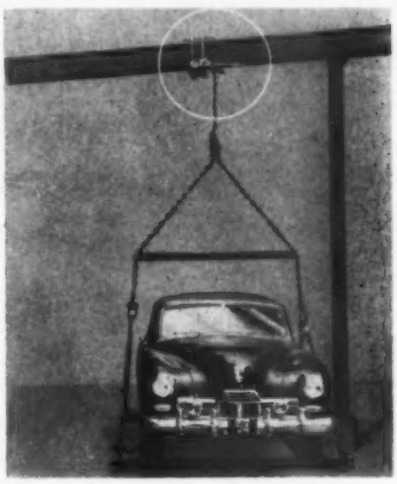
Want to *sell, ship, travel* or *buy* in Indiana? Here's the 300-page book that tells *who, where, how.* Gives all the facts about 700 cities and towns, 10,000 business firms, with size, personnel, etc. Lists banks, utilities, institutions, rail, air, and highway routes, freight terminals, etc. It's the most complete book of its kind, about this or any other state. Everyone doing business in Indiana needs this book. Every shipper and trucker should have a copy. Every salesman should carry it in his car or brief case. Book contains 100,000 facts about Indiana, all indexed for easy reference. This is the 1950, 7th Edition, just off the press. To avoid bookkeeping send check for $10.00 with order. If not what you expected, money cheerfully returned.

INDIANA STATE CHAMBER OF COMMERCE
BOARD OF TRADE BUILDING
INDIANAPOLIS, INDIANA


## "CHEMICALS YOU LIVE BY" DESCRIBED IN BOOKLET

"The Story of the Chemicals You Live By" is the title of a 16-page booklet concisely and clearly describing eight major groups of chemical products and depicting their diverse utilization in industry, issued by the Diamond Alkali Co., Union Commerce Building, Cleveland, Ohio. Written in simple, nontechnical terms, it reviews soda ash, caustic soda, chlorine, bicarbonate of soda, silicates, calcium carbonates, chromates, and specialty chemials, pointing up the economic signifiance of each group. Copies of this informative "primer" on basic alkali chemicals and their derivative specialized materials and their co-products, are available without cost.

## TWO TONS ON A WRENCH HANDLE



Trimont engineers hung 4510 lbs. of automobile on the handle of the new Roxco Pipe Wrench to show how maximum strength has been combined with minimum weight. Through stress analysis in Roxco's design, useless metal was engineered out. Extra metal, exactly where needed for extra strength, was engineered in. Other features include induction-hardened teeth, comfort-shaped handle and a new cushion action for fast ratcheting. All Roxcos, sizes 6" to 48", carry an individual serial-numbered guarantee against breakage in normal heavy-duty use. Details available from Trimont Mfg. Company, Roxbury, Mass.

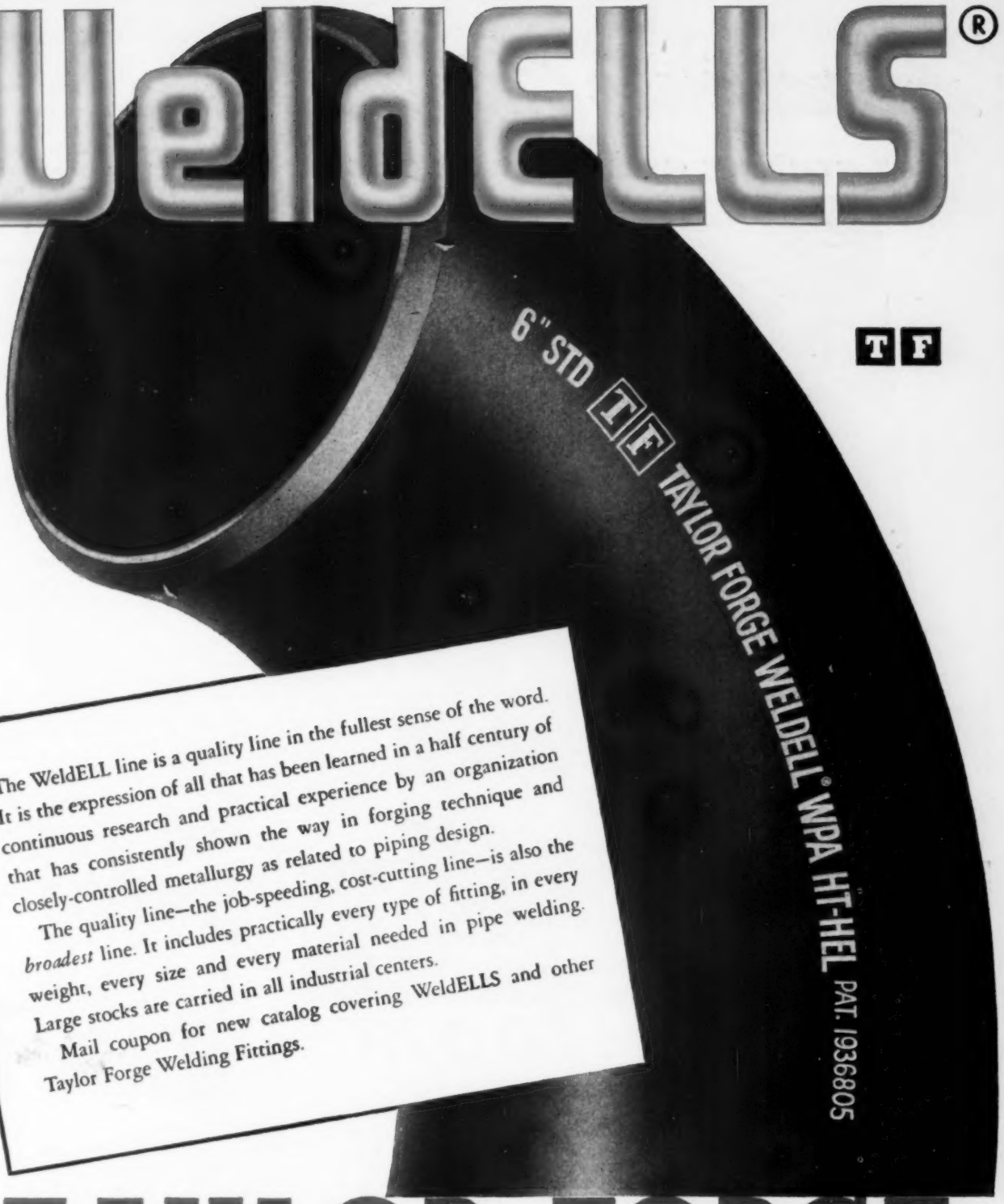
## PORTABLE OXYACETYLENE SHAPE CUTTING MACHINE

Availability of a new portable, low-priced oxyacetylene shape cutting machine is announced by Air Reduction Sales Company, 60 E. 42nd St., New York. According to Airco, the machine which is known as the No. 3 Monograph, brings machine gas cutting within the economic reach of thousands of shops which previously have been unable to handle their own shape-cutting.

The Monograph will cut steel up to

(*Please turn to page* 276)

# WeldELLS®




TF

The WeldELL line is a quality line in the fullest sense of the word. It is the expression of all that has been learned in a half century of continuous research and practical experience by an organization that has consistently shown the way in forging technique and closely-controlled metallurgy as related to piping design.

The quality line—the job-speeding, cost-cutting line—is also the *broadest* line. It includes practically every type of fitting, in every weight, every size and every material needed in pipe welding. Large stocks are carried in all industrial centers.

Mail coupon for new catalog covering WeldELLS and other Taylor Forge Welding Fittings.

# TAYLOR FORGE

*Taylor Spiral Pipe is again promptly available in a broader range of sizes and thicknesses. Coupon brings pipe bulletin.*

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P. O. Box 485, Chicago 90, Illinois
Offices in all principal cities: *Eastern Plant:* Carnegie, Pa. *Western Plant:* Fontana, Calif.

☐ Please send new Catalog 484 covering welding fittings and forged steel flanges.
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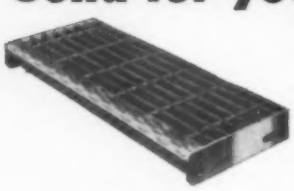
# Here's your Catalog

## for grating and stair treads




**Full of applications, specifications and engineering data that will help solve your grating problems**

## Send for your copy TODAY



**BLAW-KNOX ELECTROFORGED STEEL STAIR TREADS**

Designed for tremendous strength against impact. Available with rolled diamond checker plate nosing (illustrated); twisted cross bar nosing; or abrasive nosing.

WHATEVER your grating problem . . . flooring, catwalks, stair treads, bridge surfacing, sidewalk doors, subway gratings, or any of the hundred and one uses for any industry . . . you'll want this big new Bulletin for complete information on construction details and *all* the advantages of Blaw-Knox Steel Gratings.

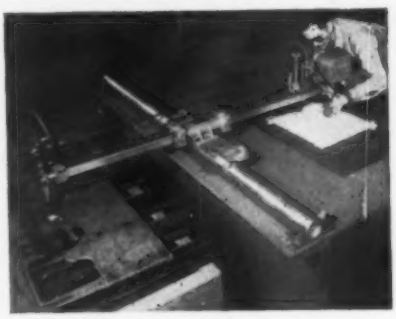
*Electroforged* into one piece for extra strength and permanence! Twisted bar construction for safe, non-slip footing! Self-cleaning! Maximum open area for light and air! Economical to install, easy to maintain! Adaptable to many uses! Get all the details *now* . . . write for Bulletin 2296.

**BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY**
2075 Farmers Bank Bldg., Pittsburgh 22, Pa.

**BLAW-KNOX ELECTROFORGED STEEL GRATING**


(*Continued from page 274*)

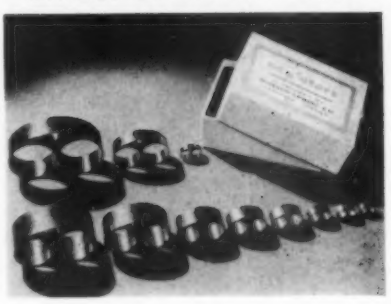
eight inches in thickness, in any shape within a 54" x 32" area, at speeds ranging from 3 to 30 inches per minute. The length of the cutting area can be extended by adding tubular rail extensions. It is stated that the machine will also handle straight-line, circle and bevel cutting jobs with a high degree of accuracy, making a truly portable machine



**The Monograph will cut steel up to 8" thick, in any shape within a 54" x 32" area.**

that is easily transported from shop to shop or to the work. The entire unit is packed in a sturdy carrying case that can be conveniently handled by two men and stored in a 7' x 1½' space. Equipment includes manual tracing device, torch, tip, tubular rail, hose, straight edge, radius rod and the carrying case. Printed matter available.

## "TRY-IT-FOR-SIZE" CLAMP KIT OFFERED BY HUNTER SPRING



A new "try-it-for-size" kit (No. NC-11) of eleven different neg'ator clamps—members of a new and unusual family of one-piece coil-form gripping devices just introduced to industry this Fall—is announced by Hunter Spring Company, Lansdale, Pa., to help research, maintenance, production and display people investigate different possible uses and determine which styles and sizes best suit their particular requirements. The trial kit price is $3.00.

The assortment includes one each of the eleven standard sizes—with clamping pressures from 5 ounces to 18 pounds, automatic take-up (and constant pressure) out to maximum openings of 3¼ to 20 inches, widths from ¼ to 1¼ inches, and coil diameters from 5/16 to 2 inches.

Because the kit covers such a wide

(*Please turn to page 278*)




**One for every place . . .**

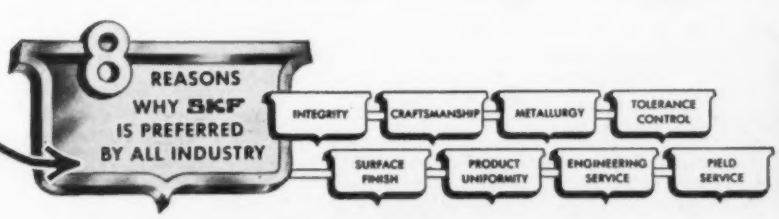
**and one place to get them all**

# PILLOW BLOCKS ENGINEERED BY SKF

Specify pillow blocks and flanged mountings by SKF and you get bearings and housings engineered as a unit. What does this mean to you? It means you get the full benefit of SKF's skill and precision methods of manufacture. It means you're sure of minimum friction and trouble-free, low-cost operation. It means efficient seals that retain lubricant . . . keep out dust and abrasive elements. It means minimum maintenance . . . maximum efficiency.

SKF supplies 5 basic types of pillow blocks for shafts from ½-inch to over 9-inches . . . and 2 basic types of flanged mountings for shafts from ½-inch to 2 7/16-inches. Whether you need Series SES for lightly loaded applications or Series SDAF to withstand unusual shock and heavy thrust loads . . . or any intermediate type . . . there's an SKF pillow block that's exactly right for the job.

Check your SKF Distributor, he has a stock of these pillow blocks and flanged mountings to meet *all* your requirements. *SKF Industries, Inc., Philadelphia 32, Pa.* 7044




**SKF**
**PILLOW BLOCKS**

*Pioneers of the Deep Groove Ball Bearing—*
*Spherical Roller Bearing—Self-Aligning Ball Bearing*

You're sure of faster working

EXTRA CLEAN

Sockets

in

CLEVELAND

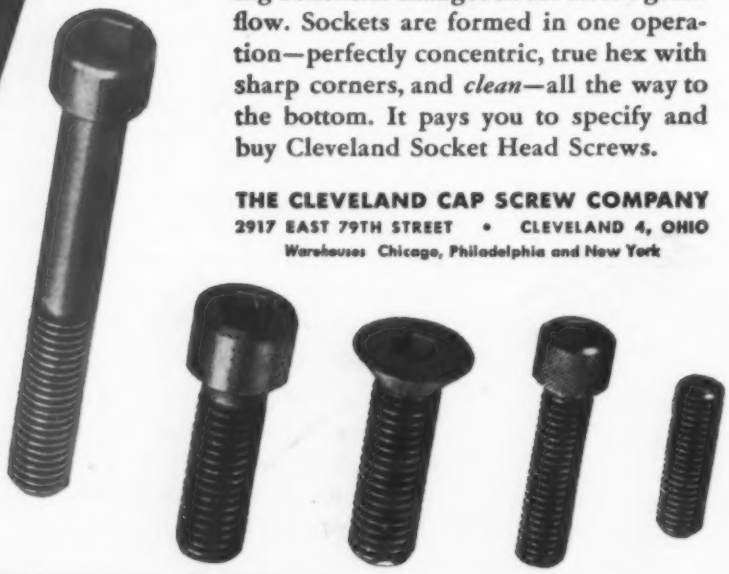
Socket Head

Screws



Here's what the Kaufman *Double Extrusion* Process does for Socket Head Screws. It gives them greater strength by creating beneficial changes in the steel's grain flow. Sockets are formed in one operation—perfectly concentric, true hex with sharp corners, and *clean*—all the way to the bottom. It pays you to specify and buy Cleveland Socket Head Screws.

THE CLEVELAND CAP SCREW COMPANY
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Warehouses Chicago, Philadelphia and New York



CLEVELAND
Top Quality
FASTENERS

ORIGINATORS OF THE
KAUFMAN DOUBLE EXTRUSION PROCESS
Specialists for more than 30 years in
CAP SCREWS, SET SCREWS, MILLED STUDS
Ask your jobber for Cleveland Fasteners

(*Continued from page 276*)

range of clamping pressures in systematic incremental steps (following an Am. Standards Assn. preferred number series such that each succeeding size is approximately 50% huskier), it is easy to determine the clamp needed for any user's application—be it broom or tool holders, fixtures for merchandisers display, jigs for welding or brazing, hangers for pipe or wire, guides for cable or cord, or any of the hundreds of gripping or guiding jobs to be done throughout industry. And, as with any wide assortment, the kit makes it possible to stock extra odd sizes against future emergency requirements.

The neg'ator clamp is only one of 12 fundamental forms of the Hunter neg'ator—the first elastic member to exhibit negative or constant force deflection characteristics. As applied to clamping, a constant force-deflection characteristic means constant clamping pressure regardless of the thickness of the object held.

In addition to the constant pressure characteristic, neg'ator clamps possess five other notable features—(1) automatic take up, (2) enormous dimensional range between clamp heads, (3) clamping pressures inherent in a single part, (4) extreme flexibility in spotting clamping pressures (the device can actually be used around a corner), and (5) coil form head or jaws.

## ELECTRIC METAL-MARKING TYPEWRITER

Electric metal marking typewriter, known as the Automark, which can be used on leather, wood, plastics, etc., is being marketed by the Cadillac Stamp Company, Dept. IN23, 2138 Riopelle, Detroit 7, Michigan. It is stated that it can be adjusted to be strong enough to mark (before hardening) on steel up to ½ inch thick.



**The metal marking typewriter can also be used on leather, wood, plastics, etc.**

The machine has been perfected for the detailed marking of name plates. There are no levers to pull, no dials to spin. The machine is all electric, and it is said that the automatic feed table makes for definite savings. Type sizes are interchangeable, 1/32" to ¼". Letter wheels are featured by quick interchangeability. Operation is simple, and clear cut letters are produced by an easy touch on the key.

# This tubular fireman always rings the bell!



*courtesy*

*Beacon Devices, Inc.*

Here's a fire warning that never fails—a bottle of compressed $CO_2$ that keeps watch while you're asleep. The moment temperature reaches 130° F, gas is automatically released into the whistle stem . . . result, a warning blast audible for a quarter mile.

Both cylinder and whistle for this self-contained signal are fabricated from seamless mechanical tube—right out of Frasse warehouse stocks. The manufacturer makes it a policy to rely on Frasse tubing for his fire warning and fire fighting devices. For, along with 24 hour delivery convenience, he has found dependability . . . every cylinder withstands a pressure test of 3,000 psi—in 8 years *he has never had a failure.*

Whatever your quality tubing requirements, make it a point to check the wide variety of specifications and sizes available immediately from Frasse warehouses. You'll find mechanical tubing, stainless tubing, aircraft tubes, and condenser, hydraulic and pressure tubes in unusually complete selections. And Frasse engineering facilities ready to help you choose for most economical advantage. *Call Peter A. Frasse and Co., Inc., 17 Grand Street, New York 13, N. Y. (Walker 5-2200) • 3911 Wissahickon Ave., Philadelphia 29, Pa. (Baldwin 9-9900) • 50 Exchange Street, Buffalo 3, N. Y. (Washington 2000) • Jersey City • Syracuse • Hartford • Rochester Baltimore*

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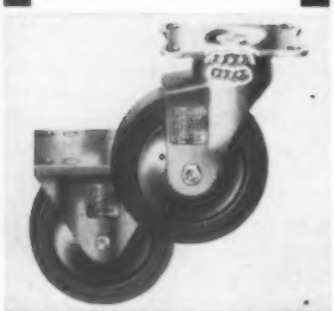
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## Purchasing For Construction

(*Continued from page* 91)

draulic "Roc-Jak" invented by a veteran Los Angeles construction man, K. O. Duncan.

The Roc-Jak turned out to be something like an automobile jack, an inexpensive gadget which made use of a manual pump and which could build up more than 150 tons of pressure to shear off huge chunks of rock, concrete, etc. It enabled a crew of two men to do more work than a group of twelve operators with pneumatic breakers, and put Atkinson's hill-removal project back on schedule in less than a month.

In the construction of theaters and small industrial buildings, high costs have been a particular problem since the end of World War II. For example, a motion picture palace worth $200 per seat has required investments ranging from $250 to $300 per seat—and, consequently, contractors specializing in this type of work haven't been doing nearly as much business as usual. But, thanks to an ingenious architect, L. E. Wilson, and an ambitious purchasing agent, C. D. Masters, Baruch Corporation has found what appears to be a more than satisfactory solution to the problem.

Evolution of the latter solution began when Wilson prepared drawings for an arch-roofed theater which could eliminate the labor and material costs required to erect walls to the full height specified for the ceiling of a conventional structure. It wasn't altogether a new idea, since ancient Moslems built arch-roofed houses and temples more than a thousand years ago (not to have money, but to attain higher structural strength for resistance to windstorms and earthquakes). However, it appeared to be a good idea except for one unanswered question: What sort of beams could be used as the wall-roofing arches? Steel beams would have served the purpose, but their cost would have been fantastic to the extent of eliminating the desirably-inexpensive features of the structure.

Then Masters called attention to the fact that Summerbell Company, a local concern, had been manufactured glued-wood structural members which were exceptionally strong and yet not too expensive. Why, he asked, wouldn't glued-wood arches do the trick? An in-

(*Please turn to page* 282)

COLORFUL
*Signs*
OF LIFETIME PORCELAIN ENAMEL



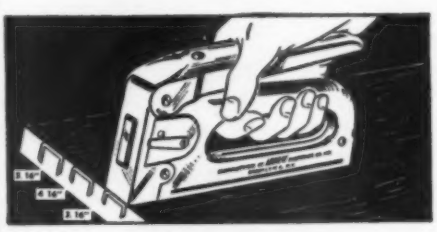
- **ADVERTISING** — Service stations and other point-of-sale and identification signs and highway signs . . . *for all types of erection.*
- **INDUSTRIAL** — Danger, Caution, Notice signs in standard colors and sizes . . . any wording desired . . . economically priced.
- **OIL FIELD** — Well, Lease, Tank Battery signs . . . with individual descriptions.
- **MUNICIPAL** — Traffic signs conforming to official standards . . . street markers, pedestal or bracket mountings.
- ***FIRST COST IS THE LAST!***

**Southwestern Porcelain signs require only occasional cleaning to retain their original brightness for years and years.**

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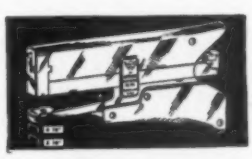
**STAPLE—to save time . . . speed up production**



**T-32 Gun Tacker**

A many purpose tool replacing hammer and tacks at trigger rate speed. Shoots a staple wherever a tack can be driven. Heavy duty Tacker of all steel construction with chrome finish. Same machine takes a 3/16", 1/4" and 5/16" staple. Loads 150 staples. $8.50.

Rustproof "Monel" staples available.



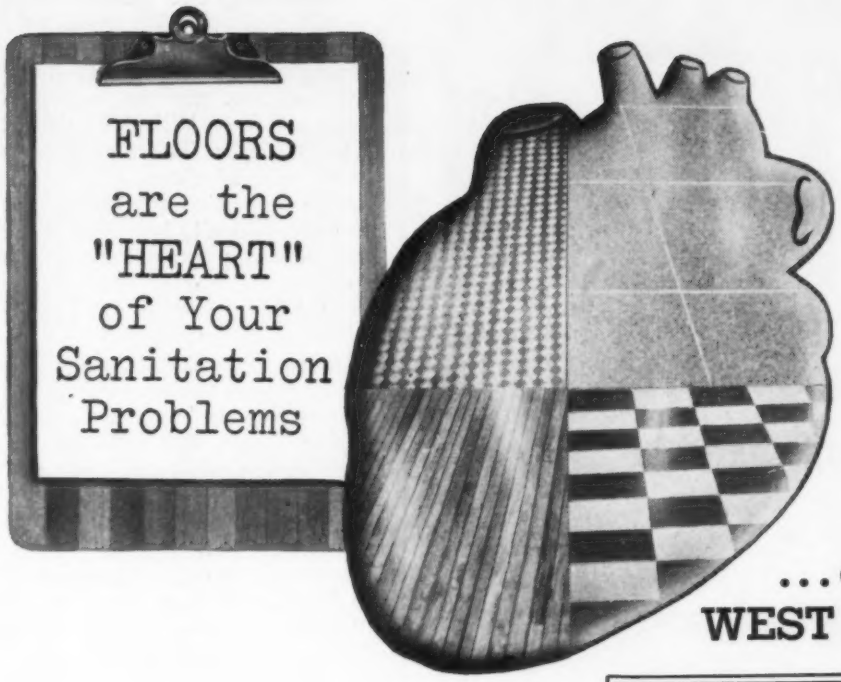
**P-22 Hand Stapler**

A heavy duty industrial plier that "reaches into hard-to-get-at places". Same machine takes 1/4" and 5/16" staples. Loads 150 staples. $6.00.

Slightly higher in the West and Canada.

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| **1. ZOLEO**<br>***Cleans*** Cork, Tile, Wood, Linoleum, Marble, Terrazzo Floors and painted or varnished surfaces. | Liquid soap with Linseed Oil Base, mixes with cold water instantly. Softens dirt, loosens grease and grime with fast emulsifying action. |
| **2. CORO-NOLEUM**<br>***Disinfects and Deodorizes as it Cleans*** all floors except rubber, soft mastic, or asphalt base tile. | Phenol coefficient of 7.5. Kills the germs of many communicable diseases in addition to cleansing and eliminating the need of soap. |
| **3. LUSTRECLEAN**<br>***Cleans, Deodorizes and Lightly Waxes*** Wood, Mastic, Linoleum, Cement, Terrazzo, Composition Tile, Asphalt Tile, Painted and Varnished Floors. | Essentially a cleaner but leaves a fine film of wax on surface. Deodorizing properties make Lustreclean a triple purpose product. Excellent for floors, walls and painted surfaces. Removes marks left on floors by composition soles and heels of shoes. |
| **4. KWYKWAX**<br>***Waxes and Finishes*** all types of floors, except Terrazzo. | No rubbing or polishing necessary. Dries in 20 minutes (or less) with a high hard lustre, which resists traffic wear, protecting floor surface. |
| **5. FLOOR MACHINES**<br>***For cleaning and waxing floors***—shampooing and scrubbing carpets, rugs, etc. | Single and double brush models, with a complete line of accessory attachments. Low center of gravity makes for greater balance, easier handling. No oiling or adjusting necessary. Trouble-free, built-in G.E. motor. |

Your floors, like the human heart, are vulnerable to the effects of neglect or indifferent treatment. To avoid shortening their "life-span" and increasing your sanitation overhead, wisely choose West floor products. Special care and treatment with West floor maintenance materials *prolongs the life* and beauty of your floors at an absolute minimum cost.

The strain on your budget is reduced because West Products, formulated for cleaning, sealing and preserving floors, are noted for their long-lasting efficiency—enabling you to protect all floors with the least time and effort.

*Our trained representative will be glad to demonstrate any West product desired. No obligation!*

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Kindly have your trained representative call to arrange a free, non-obligating demonstration ☐

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15


*Want Additional Product Information? See Page 19.*




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With two large, modern, mechanized foundries to accelerate the production of better gray-iron castings — with widely experienced supervisors and production employees — Forest City can become your casting department — right within the reach of your telephone.




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## Purchasing For Construction

(*Continued from page 280*)

vestigation was made to answer this question, and consequently a prototype of Wilson's design—Baldwin Hills Theater—has been constructed at a cost of only $150 per seat, a price that would have been exceptionally low even in 1932. Contracts for more than a dozen structures similar to Baldwin Hills Theater have been signed as this article is written; and, thanks to the "packaging" technique, they should cost even less than their prototype.

According to James Steger, Purchasing Agent for Builders' Corporation, the role of a buyer should begin in construction work along with negotiations for a new contract—not when the time comes to issue purchase orders, because then the P. A. will frequently find that optimum economies due to alternate purchases cannot be achieved due to the terms of the basic agreement.

"However," Steger adds, "it's a good idea to remember that most construction executives are engineers, since it's virtually impossible to get an engineer to accept a new idea if you can't back up your claims with a substantial array of non-controversial facts. In my case, I had nothing to do with contract negotiations for months simply because the higher-ups believed such work should be exclusively devoted to engineering technical considerations—about which I knew very little. So I began keeping a record of savings that could be achieved on various jobs, if only the terms of our contracts were not so binding with reference to materials and equipment. On one job, for example, I found that we could have saved $2000 without a sacrifice of structural quality through the use of corrugated aluminum panels in place of steel.

"For awhile, my record failed to make a noticeable impression because it was believed that our customers wouldn't approve contracts which 'contained a lot of loopholes'. Then, in the course of competitive bidding, we lost a series of important contracts to another construction company, and I decided to find out why we couldn't quote lower prices. The answer was simple: Many of our price computations were based on the use of standard old-line materials and equipment, rather than the sort of new products that could minimize our costs. For instance, I found that our estimated labor cost could have been

(*Please turn to page 284*)

# This fire-extinguishing system saved $800 a month



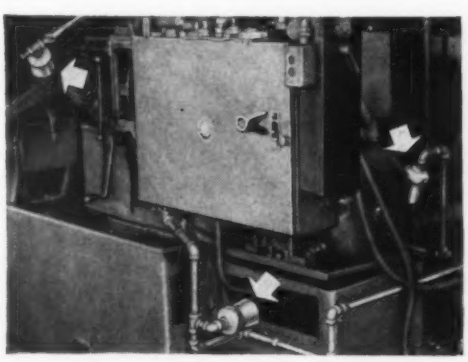

WE KNOW a big auto manufacturer who thinks of fire extinguishing systems as both protection and *production tools.*

In making valve stems they were using some automatic screw machines cooled by a light oil with a low flash point. Result—frequent fires! The company's chemical extinguishers put out the fires . . . but ruined the coolant and gummed up the machines. Result of this? There were from 16 hours to 3 days of lost time while the machines were cleaned and the oil replaced.

Finally *Kidde* extinguishing systems were installed. They detected and killed fires—automatically. Dry, clean, $CO_2$ smothered the flames quickly and effectively, then disappeared . . . leaving the oil unharmed and the machine clean as a whistle. *Downtime was cut to 1 hour!*

Company experts said that these *Kidde* systems, which cost $800 apiece, each paid for itself in the first month . . . *and kept right on saving $800 a month, every month.* They earned this money just as surely as if they were production tools.

If you'd like more information about these protection-giving production tools, write for complete information.



*Arrows show location of Multijet Nozzles of Kidde Fire Extinguishing System attached to automatic screw machine. $CO_2$ pours from Multijet Nozzles—kills fires quickly, cleanly.*

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**425 Main Street, Belleville 9, N. J.**
In Canada:
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

**Kidde**

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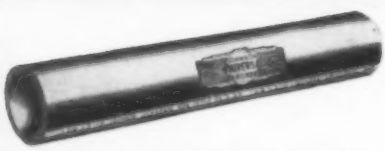
**JOHNSON DISTRIBUTOR**

*NEARLY* every industrial requirement for sleeve bearings can be supplied from stock . . . at low cost. These Johnson Bronze Bearings and metals are available at your distributor. For complete size range, write today for the new Johnson Bronze Catalog.




**Babbitt**

• Lead-base Babbitt for general industrial requirements and Tin-base Babbitt for high speed applications. Cast to be easily broken into one-pound sections. High quality made to SAE specifications.



**Universal Bronze**

• Over 350 stock sizes, completely machined, solid and cored bars. Solid bars from ⅝" to 4" diameters, cored bars from ½" to 7¾" inside diameters. 1" to 10" outside diameters.




**General Purpose Bearings**

• Over 850 sizes of Johnson GP Bearings are available from stock. Each bearing is guaranteed to be consistent in alloy, correct in tolerance, and of high quality workmanship.




**Graphited Bearings**

• Over 200 sizes of Johnson Cast Bronze Graphited Bearings. Dovetail grooves provide 40 to 45% graphite contact with the shaft. Johnson Bronze is the only manufacturer who stocks this type bearing.




**Ledaloyl *Self-Lubricating* Bearings**

• Produced by powder metallurgy. Johnson Ledaloyl Bearings are made of pre-alloyed metals. Porous structure retains lubricant. Industry is constantly finding new uses for Ledaloyl Bearings.




**Electric Motor Bearings**

• Over 300 individual bearings designed specifically for all popular motors. Johnson EM Bearings are fully machined, with oil grooves, oil holes and slots, correct in tolerance, ready for immediate installation.

*Johnson Bronze*

SLEEVE BEARING HEADQUARTERS

450 SOUTH MILL STREET : NEW CASTLE, PA.

## Purchasing For Construction

(*Continued from page 282*)

cut by a margin of 25%—and we could actually have done a better job—if we had counted on using plywood sheathing and subflooring in building a small retail store, as our competitor did. Even the most critical engineer couldn't reject that sort of data, so my point was finally made.

"Of course, we still aren't getting all the contracts in our field since I began taking part in preliminary negotiations. But we are getting our share—which is all we can handle."

* * *

## Can "Little Business" Qualify?

(*Continued from page 116*)

ment employes will do the five percenters' business, but will do it for nothing."

Sawyer's statement has fallen far short of its mark in everything, except headline hunting. The Department of Commerce has done little, if anything, to get smaller suppliers into the Government supply picture.

The Department of Labor has sought to get contracts into plants located in communities with a severe problem of unemployment, but the best that could be developed here was a ruling that where two bidders were tied for the low bid, the Government procurement officer could break the tie in favor of the prospective supplier located in an area of distressed unemployment.

The military services have concentrated their informational efforts toward telling the smaller manufacturer what to do to get military contracts, and the Economic Cooperation Administration has also sought to publicize business opportunities for smaller manufacturers under the Marshall Plan.

However, what is most surprising is not that smaller manufacturers have so little of the huge Government procurement pie, but that with the cards stacked against them, they have been able to obtain a sizable amount of Government business.

A Department of Defense analysis of military procurement showed that 27% of the total dollar volume of purchases was placed with "small business".

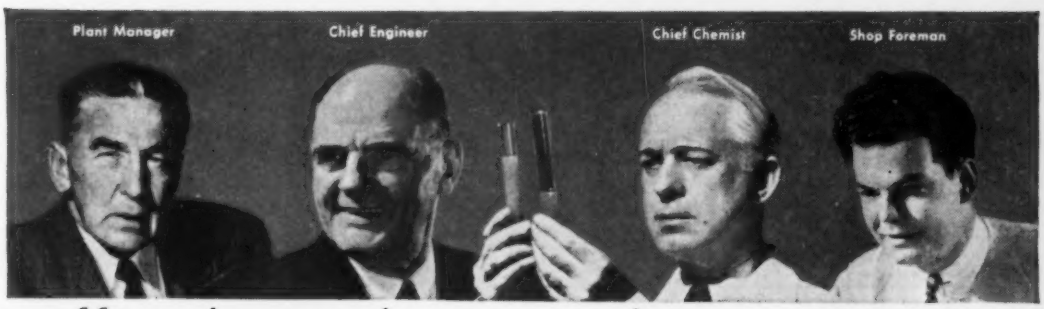
The report points out that "contracts for many complicated or technical items such as aircraft, tanks, ships, radar, rockets, and other

(*Please turn to page 286*)

# WHO should visit the 1950 Canadian International Trade Fair—with profit to their businesses and themselves



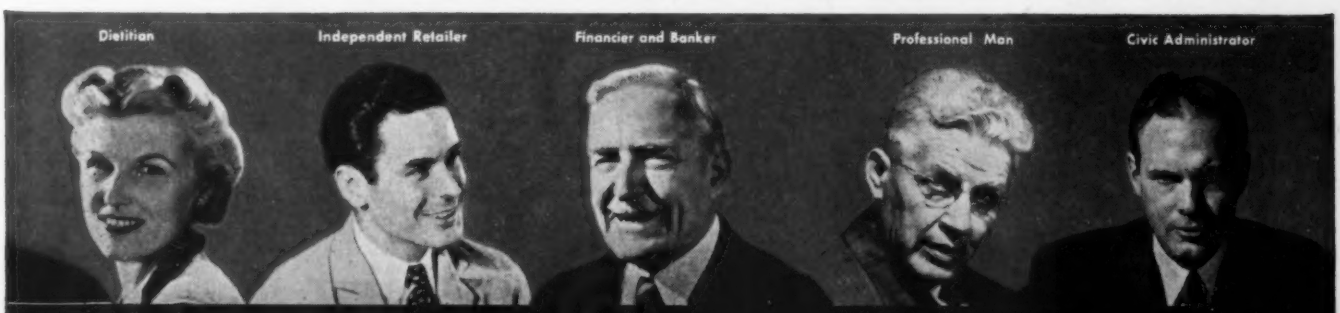

Every private businessman and such




company officials as these . . . whose services




contribute to the efficiency and profit of their firms.




## *Canadian International Trade Fair*

**MAY 29 — JUNE 9, 1950 TORONTO, CANADA**

DEDICATED TO THE PROMOTION OF INTERNATIONAL TRADE BY THE GOVERNMENT OF CANADA

## Can "Little Business" Qualify?

(*Continued from page* 284)

types of military equipment can be bought only from relatively large firms", but at the same time there is a large volume of procurements in amounts of less than $1,000.

Procurement by means of formal advertising for bids accounted for 29.8% of the total dollar value of military procurement of supplies and services. Formally advertised contracts represented 46.5% of Army purchases, 35.8% of Navy purchases, 10.7% of petroleum purchases, and 7.5% of Air Force purchases—the latter indicating the fact that aircraft and missiles procurement cannot be fitted into a standard pattern, and must be negotiated.

By far the most significant step toward spreading the business has been in the efforts of the Government procurement agencies to stimulate subcontracting by the prime contractors.

Inasmuch as the maintaining of alternate sources of supply is ingrained in the thinking of industrial purchasing agents, the stimulation toward use of smaller sources of supply comes as the confirmation of a natural impulse. The value of the Government program to aid smaller business is that, in a negotiated contract, there is more leeway on the charges made by subcontractors.

The salient factor is the widespread feeling that with Government constituting such an important bulk factor in the economy, there should be general participation in supplying the Government's needs. Realistically, however, while the Government proclaims the rights of small business, the nature of many Government purchases, and the rigid regulations governing procurement, tend to favor the "regulars"—and these whether they have grown big by tenure or ability, nonetheless tend to be big.

* * *

## How We Got Where We Are

(*Continued from page* 136)

Colonial population. It proves that the immigrants' contribution to the making of America has been valuable and often essential. The thirty-nine million immigrants who came to the United States from the wide ends of the earth between 1776 and 1940 have made our republic almost a League of Nations in itself.

America's stake in world affairs is pointed up in these essays. That vital interest is by no means a new development. World War II was actually the ninth of global wars in which America participated, beginning with King William's War in 1689. We might have regarded the erroneously called World War II more rationally had we comprehended that it was part of a series reaching back 250 years.

Four essays under the Chapter "Government of the People" deal with national politics and will doubtless please advocates of one particular political party and dissatisfy stalwarts of the other. But all are rewarding in their forthright presentation of background and fact.

Professor Schlesinger demonstrates his ability to write history in terms of everyday life. There is, for example, a great deal of historical significance in the suggestion that Americans greet their neighbors with a "How do you do?" rather than the Englishman's "Good morning".

The author is at his best in the vivacious essay titled "Food in the making of America". Many of us have forgotten that the very discovery of the New World was the fortunate result of a dietary quest. The New World laid bare a cornu-

(*Please turn to page* 288)


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Cement friendship and esteem—to bring a warm glow of remembrance! The cost is small . . . the value high!



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☐ Thimble
☐ Stir Stix
☐ Bracelet Key Holder
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☐ The items you illustrate do not fully satisfy my needs, so please send me your complete catalog and full information. (PLEASE PRINT)

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COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

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**...have greater holding power!**

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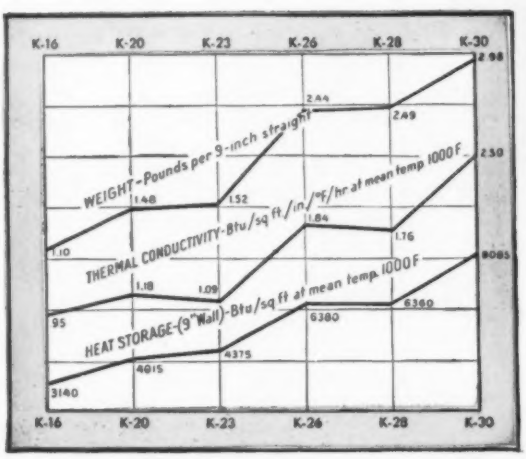
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**The performance of an insulating firebrick is closely related to its weight. The graph illustrates this principle. It shows how you can profit by adopting the insulating firebrick having the lightest weight consistent with load and temperature requirements.**

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**Because B&W Insulating Firebrick store and conduct less heat than heavier insulating firebrick, they afford faster heating-up time. This means that less fuel is required to bring the furnace to operating temperature—with consequent savings in overall operating costs.**

**Today, thousands of industrial furnace operators are enjoying direct savings in production costs through the use of B&W Insulating Firebrick. If you want more detailed information on how these lightest of all insulating firebrick can benefit you, just call for your local B&W Refractories Engineer.**

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**ARMSTRONG-BRAY**

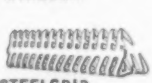


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STEELGRIP Flexible Lacing, applied with a hammer, clinches over and protects ends of belt. Boxed in long lengths.



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PLATEGRIP Fasteners for . . . Conveyor Belts. Make strong dust-tight joints in belts of any width. Spread tension uniformly. Allow natural troughing of belt. Operate smoothly over flat, crowned or take-up pulleys. Sizes for belts from ¼" to 1½" thick. Easily applied.



FLEXGRIP



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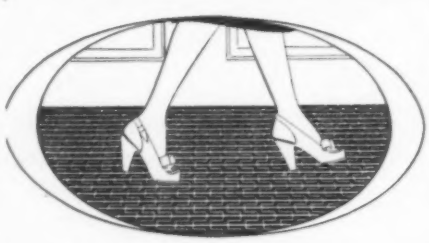
**ARMSTRONG-BRAY & CO.**

*The Belt Lacing People*

5348 Northwest Hwy. Chicago, Illinois



**THE SAFE OPEN STEEL FLOORING IS TRI-LOK**



No object over ½ square inch can pass through super-safe U-Type Tri-Lok Flooring. Fabricated without bolts, rivets or welds, it is unsurpassed for plant installation, walkways, loading platforms. Efficient distribution of concentrated loads . . . maximum free opening for light and air. Write for Bulletin JV-1140.

**DRAVO CORPORATION**

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DRAVO


## How We Got Where We Are

(*Continued from page 286*)

copia of foodstuffs such as Europe had never imagined.

"Picture the long centuries when the Old World existed without white and sweet potatoes, tomatoes, corn, and the many varieties of beans, and you have some notion of the extraordinary gastronomic advance. Add for good measure, such dishes as pumpkins, squashes, turkeys, cranberries, crab apples, chestnuts and peanuts."

But it was by no means a one way street.

"From the older continent the white man brought wheat and other small grains, many kinds of vegetables and the larger fruits; but by introducing domestic poultry, hogs and cattle he probably made his major contribution, since, apart from turkeys, the wilderness contained nothing comparable.

"If historians dealt more with the simple annals of life and less with great affairs of state, they might well consider this transformation of mankind's bill of fare as marking the transition from medieval to modern times."

In these essays we have history at its readable best. The explorations of the past and the origins of the American character are coupled with excellent advice for the present and for the new facets America will shape.

Here we can find a workable road-map that will enable us to chart our progressive journey with intelligence and courage.

"All our past acclaims our future."

This book adds solid substance to that statement.

"Paths to the Present" is a book that should be required reading for every statesman, every politician, and for every voting citizen. Purchasing agents will find it a thoroughly enjoyable addition to their wider reading.

* * *

## Modernize Plant Cleaning

(*Continued from page 97*)

ciency after correct application of mechanical methods in the removal of encrusted dirt on a factory floor was reported by the plant engineering superintendent of a large company. In this case, the equipment used was the floor maintenance machine mentioned above. A heavy layer of dirt, oil, powdered soapstone, and rubber particles was built

(*Please turn to page 290*)



# Designed for YOUR Product

SHIPPING TRADE SUPERSTRONG MADE CONTAINERS REG. U.S. PAT. OFF.

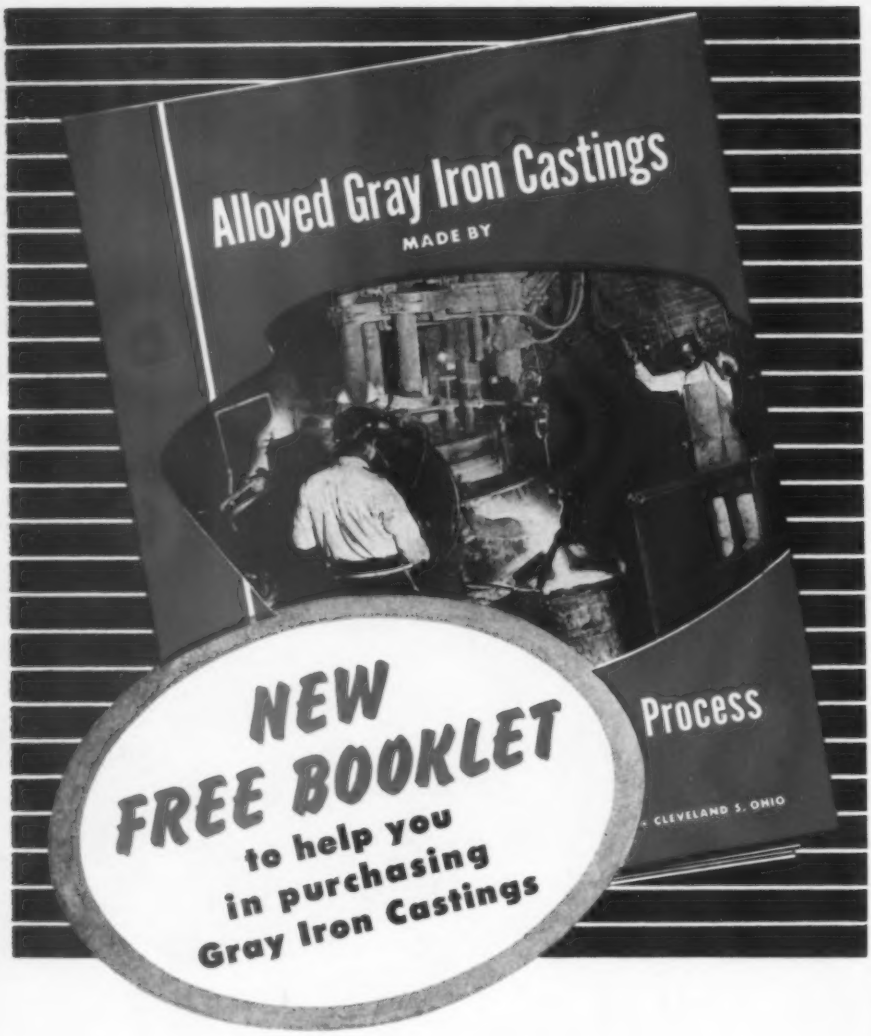
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The SUPERSTRONG box or crate for your product is on our designer's table.

SUPERSTRONG engineering and production "know-how"—based on nearly a century of experience—can create the type and size of shipping container that gives you greater overall economy through efficient construction, reduced space requirements, less shipping damage.

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**Data, Facts, Tables About Electric Furnace Process**

Here's the complete story about the Electric Furnace Process presented in an illustrated 8 page booklet designed especially for Purchasing Agents and Product Engineers.

Contents include Tables of Alloy Properties, results of Foundry and Customer tests of Random and Arbitration Bars, diagrams of the basic Gray Iron processes, and a description of the Electric Furnace Process.

Whether you want wear resistance, stronger iron, or anti-corrosion qualities, see how Superior Foundry's Electric Furnace Process can meet your most exacting requirements.

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A MUST FOR ECONOMY-MINDED PURCHASING AGENTS WHO CAN'T AFFORD TO GUESS ABOUT ALLOYED GRAY IRON QUALITY!

SUPERIOR FOUNDRY, INC., Dept. P
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Please send your illustrated 8 page booklet, "Alloyed Gray Iron Castings made by Electric Furnace Process."

Name _____ Title _____

Company _____

Street and No. _____

City _____ Zone _____ State _____

## Modernize Plant Cleaning

(*Continued from page 288*)

up regularly on a concrete floor, making it rough and dangerous for traffic. Previously, the coating was removed from time to time by hand scraping, which required many men and often slowed production. After the machine had been substituted for the hand cleaning, it was found that five advantages had resulted: the floor was cleaned faster; the surface was cleaner and smoother, permitting easier trucking; no water, chemicals, etc., were needed in cleaning; plant operations could continue during the cleaning; floor cleaning costs were reduced.

These examples are only a few of the thousands illustrating the efficiency and adaptability of modern mechanized cleaning equipment. They show how closely cleaning and production are related, and how co-operation between departments in recognizing the capabilities of mechanized equipment can work to mutual advantage.

The maintenance foreman, of course, has the direct responsibility for supervising cleaning, but both production and purchasing have an indirect responsibility—the first in recognizing the importance of proper cleaning to its own operations, the second in keeping the using department informed on the new equipment and materials best suited to conditions in the plant. Working together, they can put cleaning on a modern, mechanized "production" basis and make it pay its way through better quality and lower costs.

* * *

## Purchasing Decisions

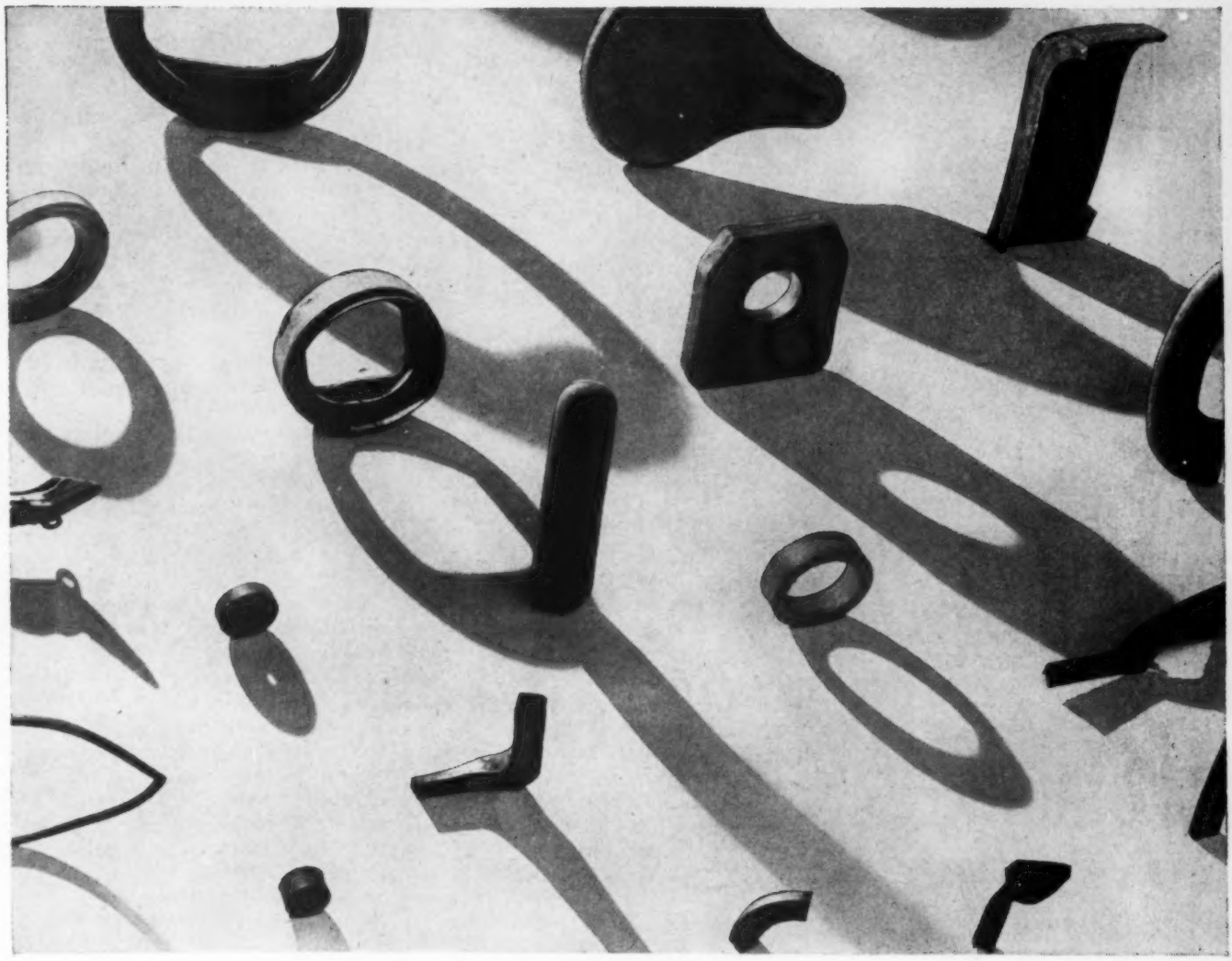
(*Continued from page 71*)

ate. His is no longer a waiting job nor a listening job nor a passive job. He adds advance planning to purchasing and procurement. He substitutes alertness for attentiveness, initiative for interviewing, action for apathy.

Will the purchasing department meet the test of the new requirements?

The answer, of course, depends on the individual purchasing agent or director of purchases. But purchasing agents, as a group, are well on the way to fit themselves for meeting the new conditions. It may be that the trend toward applying more initiative in buying is a result of the purchasing profession's broader interests rather than the other way round. Purchasing execu-

(*Please turn to page 292*)



## ENGINEERING in cellular rubber that keeps pace with your *imagination*

In some minds Spongex cellular rubber is a vibration pad for huge hydraulic presses, to others it is a powder puff. For other thousands Spongex is of a density and compression range that was especially compounded to do their job best. There seems to be no limit to man's imagination in creating new uses for Spongex.

In serving man's creative mind our laboratory has formulated over 60,000 recipes for cellular rubber. Each applies one or more of the known qualities of Spongex to insulate against shock, vibration, sound, air and temperature.

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Spongex cellular rubber is available in molded shape or die cut form—or in sheets, slabs, strips, cord, tubing, or bonded to metal or fabric.

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This WASHING MACHINE HELPS CLEAN YOUR FLOORS

Yes, you get cleaner floors at a lower cost because of a washing machine like the one illustrated above. This machine is used in testing the wearing qualities of mops in the Fuller Research Department. In this department the variables are removed from your floor mopping costs. Here, the three essentials of every good mop—long life, absorption, and rinsing speed — are scientifically controlled to insure uniformity. Only through positive standardization can *your* mopping cost be controlled. And only because of a research department like Fuller's... constantly checking, testing and inspecting...can quality be maintained. It adds up to better...and more economical...cleaning for you. Your Fuller Industrial Representative is no farther away than your telephone.

**NOW AVAILABLE in limited quantities**

**Mops of Cellulose Yarn for Smooth Floors**




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*IN CANADA: Fuller Brush Company Ltd., Hamilton, Ontario*

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## Purchasing Decisions

(*Continued from page* 290)

tives may be setting the trend rather than following it.

Purchasing agents no longer need outside views on business conditions. The National Association of Purchasing Agents has its own business survey, which is being handled by a very capable purchasing agent, Bob Swanton, of Winchester Repeating Arms Company. This report is widely quoted each month on the radio, in the newspapers and in the business press. The purchasing agent who goes to management *with* decisions will, in the long run, fare much better and do more for his company, than the one who goes *for* decisions.

Top management must both delegate responsibility and work as a team with the various functions and departments of an expanded business.

The purchasing agent who is taking advantage of all the help N.A.P.A. is offering him through the various committees, and especially the information and knowledge that can be gained from George Aljian's Educational Group, will be the man at the wheel of the know-how when information is needed about new materials.

* * *

## Futures Markets

(*Continued from page* 74)

getting stuck with a grade of rubber, or a type of hides, you cannot use.

The way to guard against this is to go into the spot market, buy the type or grade of the commodity you need, and then lift your long hedge simultaneously. The trouble with this advice is that spot prices of different grades of a commodity and the futures market do not always move uniformly. In other words, the grade differentials may be *supposed* to remain unchanged, but they do not always do so. Some of them change according to seasonal patterns, and some apparently for no good reason at all. Over a long period, the basic contention holds true enough that futures and cash markets move in line with each other, but it does not always hold for all grades of the spot commodity. The futures market trader calls this a "change of basis".

We have had a real dose of this during the past few years as a result

(*Please turn to page* 295)

# WISSCO ROPE WIRE



**UNIFORM**

**STRONG**

**TOUGH**

Wissco Rope Wire has long been the choice of many rope manufacturers. And their choice is a logical one, for this Wissco specialty wire possesses the highest possible degree of hardness, strength, toughness and fatigue-resisting qualities.

By making our own iron and steel, we can be certain that harmful proportions of phosphorus and sulphur are avoided, and that proper quantities of carbon, manganese and silicon are blended to produce the correct steel for rope wire. Then we roll, draw and further process it so skillfully that it meets the most exacting specifications.

The same careful control and skilled craftsmanship is used in producing *all* Wissco Specialty Wires. For, as makers and workers of wire, we know that it must be uniform in size, tensile, stiffness and ductility. Then it's easier on wire working machines, and customers are satisfied. We can meet your specifications for high or low carbon steel wire; round or shaped; in a wide variety of sizes, tempers, grades and finishes. Let us know your requirements.

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# are businessmen



# *COLD-BLOODED?*

**OF COURSE NOT!** Literally, their normal body temperature is 98.6—same as laborers, engineers or any other group of people. And, figuratively, they're no more, or no less, cold-blooded—as a group.

We all know unreasonable generalizations can be dangerously false. Common sense and on-the-job experience show us the value of dealing specifically with ideas, problems—and *people.*

Let's not make the big—and costly—mistake, then, of generalizing on religious or racial groups. Adopt and *carry out* these common sense principles:

1. Accept—or reject—people on *their individual worth.*
2. Don't listen to or spread rumors against a race or a religion.
3. Speak up, wherever we are, *against* prejudice. Work for understanding.

A PUBLIC SERVICE PROJECT
THE ADVERTISING COUNCIL

***Published in the public interest by:***

# PURCHASING

## Futures Markets

(*Continued from page 292*)

of supply shortages in virtually all commodities. These resulted in sometimes fantastic price distortions in the futures markets, because the approach of the maturity of a delivery month usually saw the longs so firmly in the saddle that they had the shorts at their mercy and at times ran a real squeeze on them.

When that happens—when you are caught with a hedge in such a month—all you have left is a prayer. If you get caught in such a situation because your commodity broker did not warn you in time to get out of a nearby delivery month, change your broker, fast. One food processor lost more than $400,000 within a few months merely because he neglected to follow the advice given him to switch in time from a May to a September position in cottonseed oil.

This underscores the importance of using good judgment, not only in determining whether a futures market is broad enough to offer sound hedging opportunities, but also in placing hedges in the right delivery months. This applies particularly to short hedges, and also to the types of pseudo-edges described earlier.

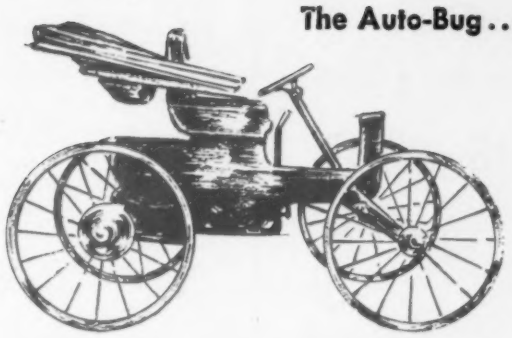
### *Hedges in Merchandising*

There is of course a big difference, in respect to hedging, between the industrial buyer on the one hand, and, on the other, a merchant of the type of the grain elevator operator, the cotton broker, or the rubber importer. These merchants know that the true meaning of hedging is the deliberate sacrifice of potential inventory profits. They are usually operating with a relatively small working capital, so that they cannot take a chance on price speculation. They are content to make a living from normal merchandising profits. That is why hedging techniques are found most highly developed in such types of business. They all know that they can stay in business only if they use the futures exchanges to the fullest possible extent.

The situation of the industrial purchasing agent is basically different. I do not see how, under present futures market conditions, a processor or fabricator can adopt a policy of automatic and systematic hedging in any of the metals markets. Roughly speaking—and this is merely a rule of thumb—he will find such a policy difficult in any futures market where his own hedge

(*Please turn to page 296*)


The Auto-Bug . . . 1902



**Like to Drive this to Work Every Day?**

Not in this efficient age! So why use sticky, old-fashioned friction tape? The latest POLYKEN tape is the first improvement over friction tape in over 50 years.

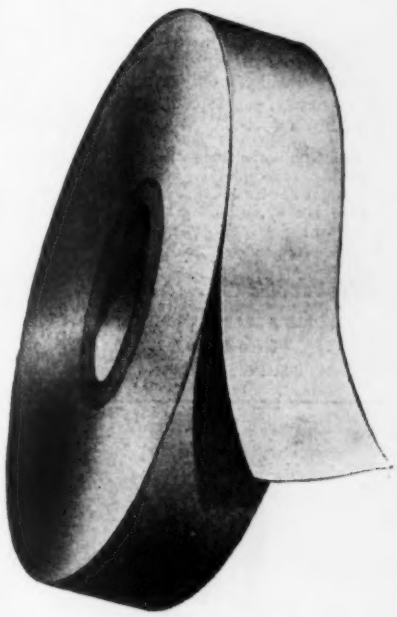
**MAINTENANCE MEN**

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***Beats Old-Fashioned "Friction Tape" 8 Ways***

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POLYKEN No. 163 tape is typical of the many "firsts" developed by POLYKEN research laboratories . . . ideal for countless maintenance and electrical jobs. Try it!

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FOLDING CHAIR



**American Folding Chair No. 43**

Formed steel seat and back. Triangular reinforced tubular steel frame; solid-steel cross braces. Dipped, baked-enamel finish. Replaceable rubber feet.

For every industrial need—in cafeterias, recreation rooms, or assembly rooms—this is the perfect folding chair! Safe—can't tip in use. No snagging, pinching, or soiling hazards. Folds quickly and quietly. Light and compact, easy to carry and store. Easy on the budget, too. Write for full information.

**Also with wood seat**—American Folding Chair No. 44, same advantages plus five-ply, urea-resin-bonded hardwood seat, durably lacquered. (And No. 47, upholstered in brown imitation leather.)

*American Seating Company*
WORLD'S LEADER IN PUBLIC SEATING
Grand Rapids 2, Michigan
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## Futures Markets

(*Continued from page 295*)

position would be larger than 5% to 6% of the open interest.

The same limitations do not apply necessarily to the pseudo-hedge on inventories and commitments, however. These can certainly be used to good advantage by purchasing agents when the described conditions arise. That is why, despite the many ifs and buts that have been cited, the futures markets can be of real help to the purchasing agent—provided he does not expect too much and that he uses them properly.

* * *

## PENNSALT ISSUES NEW CORROSION RESISTANT CEMENT CHART

A new, complete chart showing the resistance of both resin and silicate cements to various corrosive chemicals has just been issued by the Special Chemicals Department of The Pennsylvania Salt Manufacturing Company.

Designed as a tool to aid the corrosion resistant masonry construction trade in selecting the proper cement for specific industrial uses, the chart shows the resistance of Pennsalt PRF, Asplit, Causplit, Pennsalt HF, and Penchlor Acid Proof Cement to a list of 259 chemicals and chemical compounds from acetaldehyde to zinc sulfate.

The new chart is believed to be the most complete listing of its kind and is based on reliable tests conducted by Pennsalt. Copies may be obtained by writing Special Chemicals Department, Pennsylvania Salt Manufacturing Company, 1000 Widener Building, Philadelphia 7, Pa.

* * *

## REDUCES COST OF SILVER BRAZING PREFORMS

A new method of coining silver alloy washers for various fusing, bonding, brazing and soldering operations, developed by the Lucas-Milhaupt Engineering Co., 5057 South Lake Drive, Cudahy, Wis., is claimed to bring about a 30 to 52 per cent reduction in the cost of silver brazing preforms. The process forms a washer by subjecting round wire rings to 180,000 lbs. pressure per square inch between polished dies. The savings are made possible because the method eliminates dies and excessive scrap associated with conventional stamping methods. Only as much of the silver alloy is used as is necessary to form the washer. Available in Easy-Flo and Sil-Fos, the washers can be produced in a variety of shapes and sizes, according to individual specifications. Further information and free samples of the washers are available upon request.


Not...like



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**THE WITT CORNICE COMPANY**
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*"Originators of the Corrugated Can"*

***WITT CANS are outstanding because:***

**"Right Angle" Sides** assure greater strength, extra resistance to rough handling . . .
**Heavy Gauge Steel** provides basic ruggedness, reinforced by . . .
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**Structural Steel Bands,** which protect top and bottom of can, act as shock-absorbers.
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**Pinch-proof Handles** and a sturdy, one-piece top completes the WITT Can, except for the famous . . .
**Quality Assuring Guarantee** . . . WITT Cans outlast ordinary cans, three to five times.

The differences between two Cans, similar in appearance, are truly "uncanny." Beyond the fact that both are Cans, there's little real similarity. The WITT Can is designed to give far longer service, hence far greater value.

Prove for yourself the superiority of WITT Cans. Conduct your own "sidewalk survey." Just notice a typical group of Cans on any sidewalk. WITT Cans stand out, straight and sturdy, even after years of hard use.




***WITT CANS have the "right angle"***



**STRAIGHT SIDES Provide Rugged Strength . . . Greater Resistance to Rough Handling . . . Longer Wear!**

# ALOYCO introduces better sampling valves in stainless steel and corrosion-resistant alloys

The use of valves for sampling liquids to secure accurate analytical data is an important phase in the control of many chemical processes. To eliminate the many disadvantages of standard valves for this service, Aloyco has developed valves designed specifically for sampling purposes. These valves are available in Aloyco 20, 18-8S, 18-8SMo and other alloys.

***Send for Bulletin No. 4***

**Figure No. 733 incorporates all the features found most desirable for sampling operations. It has a surge chamber which eliminates splattering and the inlet flange may be tapped to receive a pipe extension for sampling in zones away from the vessel's side walls. When installed the stem is vertical as a safety and space saving factor.**

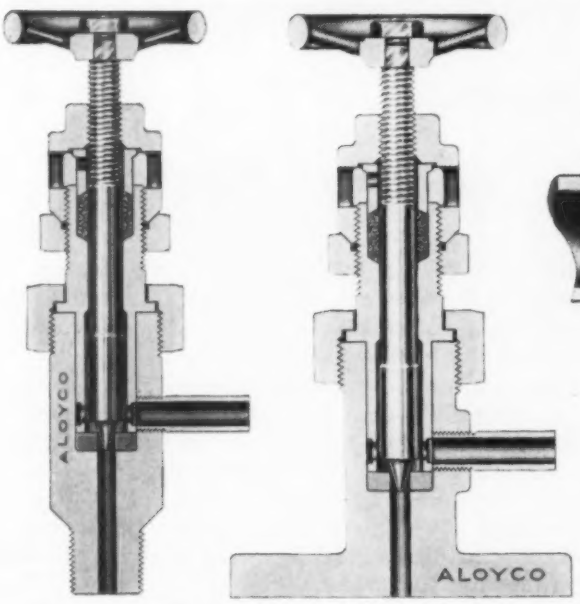
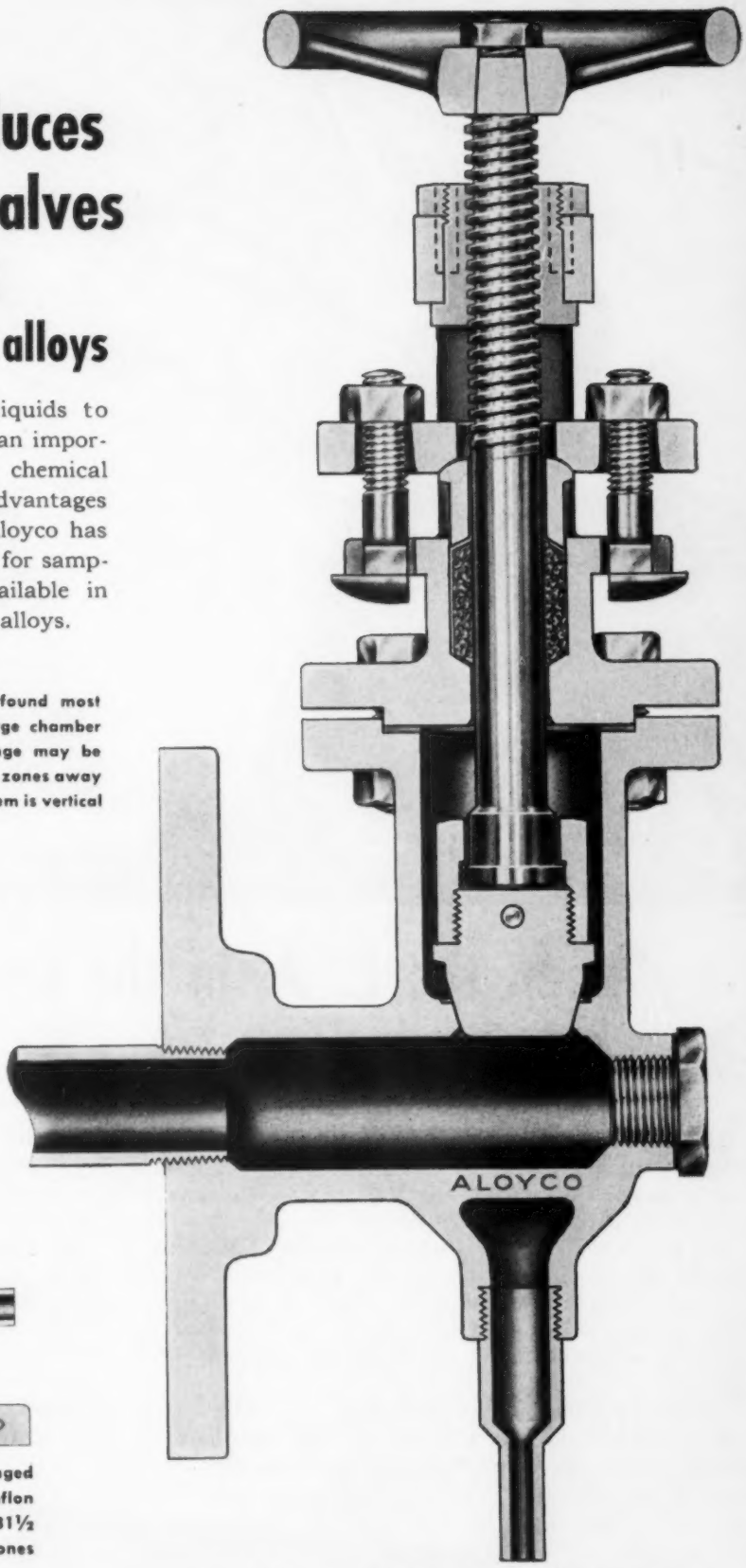



**Figure No. 732½ screwed end and Figure No. 731½ flanged end are union bonnet, outside screw valves, with Teflon renewable seats. Stems are in horizontal position. No. 731½ may be provided with a tapped inlet for sampling in zones away from vessel's sidewalls.**




***Aloyco Valves are manufactured in compliance with the new MSS Stainless Steel Valve Standards S.P.-42.***

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*Mr. J. S. Parry (left), Eastern Industrial Manager for Westinghouse Electric Corporation, points out the convenience of his company's nation-wide service to Mr. Myron Powers, Chicago Pneumatic Tool's Manager of Purchases.*

# "Keep the P. A. in the know— he's the man who can say 'Yes'"

"In plant after plant, behind a door marked 'Purchasing Agent', sits the key man in the successful selling of any industrial product today," says Mr. Parry, Westinghouse Electric's Eastern Industrial Manager.

"That is why we stress the importance of Westinghouse nation-wide service to our Purchasing Agent friends. This service, we believe, not only can lighten the burdens of the Purchasing Executive, but insure a smooth overall operation between his company and ours."

Take a tip from Mr. Parry. Keep the P.A. *in the know*, for he's the man who can say "yes", and make it stick. There is no better time to inform him, moreover, than when he is looking for information—in *Purchasing*. Regularly, each month, he turns to this, the P.A.'s own magazine, for news of new products, methods and materials that will help lighten his burdens.

Consistent, informative advertising in *Purchasing Magazine* is bound to get results. For *Purchasing* goes direct to the Purchasing Agent, the real power in today's buying, and it is read by P.A.'s representing 85% of industry's buying power. Take advantage of this efficient, low-cost way to sell industry by selling the P.A. Write to *Purchasing*, 205 East 42nd Street, New York 17, N. Y. Offices in Chicago, Cleveland, Los Angeles.

PURCHASING

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THE NATIONAL MAGAZINE FOR PURCHASING EXECUTIVES

# Starbilt STORAGE EQUIPMENT

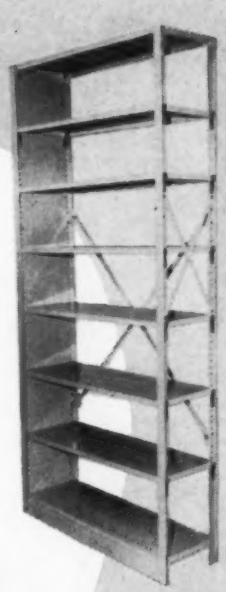
## For Planned Efficiency!



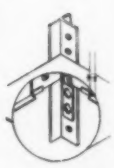
For every part made, Star has a standard part bin. That means custom built precision at mass production cost to you. Bin shelves are adjustable on 1½" centers with snap fasteners for quick and easy installation of dividers. Take your choice of seven attractive baked on enamel finish colors. Starbilt bins are available in 12" - 15" - 18" depths.



Snap fasteners for instant adjustment of divider spacing



Steel shelving developed to fulfill the new problems in modern stock control. Starbilt offers the essential T-iron construction which eliminates the duplication of uprights and the quick change clip which snaps in place without tools. Combined with the T-iron construction one pair of quick change clips does the work of two. There are five standard shelf designs to meet every load requirement.



quick change clip

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OF STARBILT STORAGE EQUIPMENT

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Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Sleeves • Hardened and Ground Washers • Bushings

● A survey of your high precision parts requirements by Aetna engineers may bring you important economies. For, here at Aetna, besides top quality ball and roller bearings, you will find today's most advanced facilities for producing an infinite variety of miscellaneous precision parts . . . to whatever hardness or precision finish you need . . . at prices usually below your own production costs. Complete laboratory control and exceptionally strict inspection procedures will guard the quality of your parts from start to finish. Our variety of tools and dies are so extensive that most parts can be produced to fit your requirements without extra expense of special tooling . . . even should you require washer-type parts up to 38" O.D. Send your prints for recommendations and estimates. No obligation.

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## Another Shipping Problem Solved By Stanley Steel Strapping

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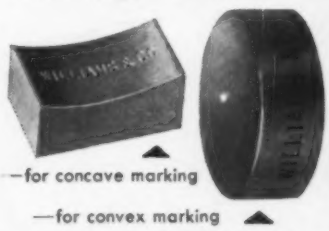
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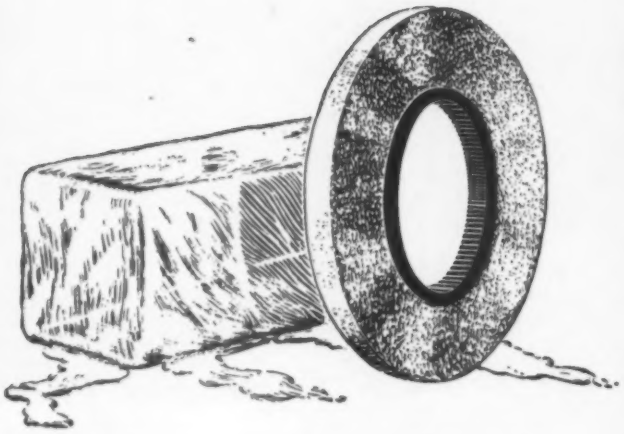
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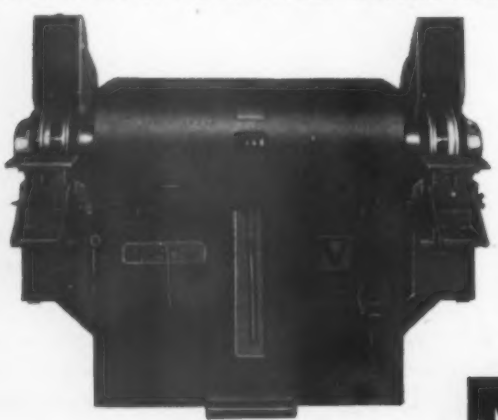
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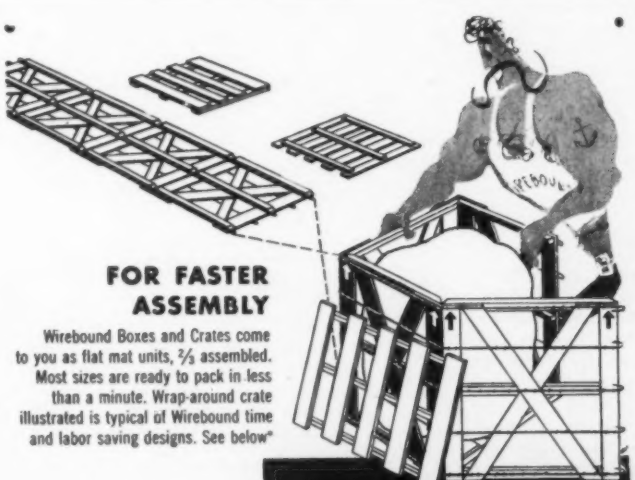
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# LETTERS . . .

## COMPETITION MADE INCOMPETENT

I should like to obtain, for distribution to the key men in our organization, 29 reprints of the article entitled "Competition made Incompetent" by Stuart F. Heinritz which appeared in the December, 1949, issue of PURCHASING. If these are available, will you please forward them to me at your earliest convenience, together with your invoice to cover the cost.

James H. Robins, President
The American Pulley Co.
Philadelphia 29, Pa.

## PURCHASING IN BRITAIN

The talk by Stuart F. Heinritz, editor of PURCHASING, on the industrial situation in Great Britain, is one of the finest I have ever heard presented before the New York Purchasing Agents Association.

E. M. Krech, Director of Purchases
J. M. Huber Corporation
New York, N. Y.

. . . so intensively interesting and absorbing to myself as well as my companions at the same table that I desire to express my appreciation . . .

A. A. Ayers, Purchasing Agent
Rowe Manufacturing Co.
Whippany, N. J.

The talk was based on the four-part series describing industrial purchasing under Socialist rule. The series began in the December, 1949, issue of PURCHASING and ends in this one. See page . . . A limited number of reprints is available at 75¢ per set.—Ed.

## BOUQUET

I am writing to express my personal appreciation, and I am sure members of District Seven Associations who attended the Jacksonville Conference feel the same way, of the excellent manner in which you have reported the District Seven Conference in December PURCHASING.

George H. Cole, Purchasing Agent
Alabama Power Co.
Birmingham 2, Ala.

## BUYING FOR RESALE

Knowing that purchasing is your theme and business, can you give us some information on a course of purchasing? We are talking, of course, about buying and selling for resale.

We would appreciate any information you can give us on this score.

John J. Bohning
Vice President & General Manager
The Geo. Worthington Co.
Cleveland 1, Ohio

We know of no such course, although many schools and colleges do have special courses on industrial purchasing in connection with their business administration courses. Agents Association of Cleveland Purchasing Agents Association of Cleveland could give you the names of the schools having such courses in your area.—Ed.

## DIE CASTINGS

We would appreciate receiving a dozen copies of the article "How to Buy Die Castings", by Francis G. Jenkins, as published in the October issue of your magazine.

If there is any charge for these copies we will gladly remit upon receipt of your invoice.

C. H. Scott,
Alloy Die Castings Co.
Los Angeles 1, Calif.

Reprints of the N.A.P.A. Prize Papers are available at the National Association of Purchasing Agents, 11 Park Pl., N.Y.C.——Ed.

## INSULATING PIPE COATING

I am trying to develop a file on protective coating, for use on pipes and tanks, which has insulating quality. Would thank you to furnish me names of manufacturers making such a product.

We are particularly interested in a product that can be sprayed, troweled or brushed on and that will withstand strong caustic solution.

H. L. Frater, Purchasing Agent
Kaiser Aluminum & Chemical Corp.
Baton Rouge 2, La.

See "Coatings—Pipe" and "Coatings—Protective" in the Conover-Mast Purchasing Directory. In the latest edition (Spring 1950, 18th edition) these classifications are on page 142. If the directory is not available, write to the Conover-Mast Purchasing Directory, 205 East 42nd St., New York 17, for a copy, no charge.——Ed.

## PURCHASING MANUALS

In various instances we have noticed and read articles in PURCHASING relative to preparation of purchasing manuals. Most of the articles had partuclar reference to specific firms who had found it necessary or advisable to prepare these manuals..

Since we contemplate preparing such a manual for our company, we thought perhaps you could readily obtain for use copies of such purchasing manuals that are in use by various firms. Will you kindly forward any available information of this type you might be secured.

C. E. Hennen, Purchasing Agent
Consolidation Coal Company (Ky.)
Jenkins, Ky.

During 1949 we published the following articles on manuals:

"Purchasing & Materials Control Manual," Rheem Manufacturing Co., page 90, January, 1949, issue.

"Purchasing Manual as a Purchasing Tool," Edward M. Krech, J. M. Huber Corp., page 95, May, 1949.

"Purchasing Department Manual J. M. Huber Corporation," Edward M. Krech, page 99, July, 1949.

"Purchasing Policy Manual," J. E. Bedford, page 107, September, 1949.

"Foxboro Co., Text of Manual," page 93, October, 1949.

"How to Use Purchasing Policy Manual," F. Albert Hayes, Bigelow-Sanford Co., page 110, December, 1949.—Ed.

## EVOLUTION

Can you refresh my memory as to humorous definitions of engineers, salesmen, and purchasing agents, written I believe by Elbert Hubbard?

George Masefield,
445 Park Ave., New York

We cannot locate the Hubbard concoctions, but the following libelous statements may be what you have in mind.—Ed.

An engineer is a man who starts out knowing a great deal about a very little, and keeps on learning more and more about less and less until he ends up knowing practically everything about nothing.

A salesman is a man who starts out knowing very little about a great deal and keeps on learning less and less about more and more until he ends up knowing practically nothing about everything.

A purchasing agent is a man who starts out knowing a great deal about a great many things, and keeps on learning less and less about fewer and fewer until he ends up knowing practically nothing about anything, thanks to his association with engineers and salesmen.

## HUBER MANUAL MIMEOGRAPHED

I find your publication most helpful in supplementing my lectures in the class in purchasing that I conduct. I found very helpful your publication of the purchasing department manual of the J. M. Huber Corporation in the July, 1949, issue.

I would like to have permission to mimeograph a copy of this article and pass it out to my class.

Jack H. Holland, Commerce Department,
San Jose State College,
San Jose 14, Calif.

## PURCHASE LAW

We would like to obtain a copy of some strictly purchasing practical and technical manual, which book perhaps would touch on phases of present day business law and practices, particularly in contractual relationships, the issuance of contract forms, etc.

J. A. Andrus, Director of Purchases
Rex Manufacturing Co., Inc.
Connersville, Ind.

The best source of information on this subject is the series on purchase law, by Leo T. Parker, appearing monthly in PURCHASING. The series has run uninterruptedly since. August, 1942. Of the many books on commercial law, two are "Business Law" (Connington and Bergh), published by Ronald Press Co., 15 East 26th St., New York, N. Y., and "Business Law, With Personal and Social Applications," published by McGraw-Hill Book Co., 330 West 52nd St., New York, N. Y.

The book, "Purchasing," by Stuart F. Heinritz, (Prentice-Hall, 70 Fifth Avenue, New York, N. Y.), has a chapter on the legal aspects of purchasing, setting forth the more important legal principles applicable to purchase transactions.—Ed.

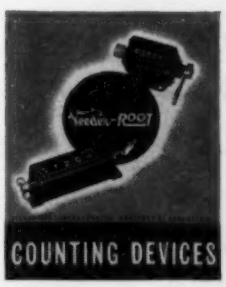



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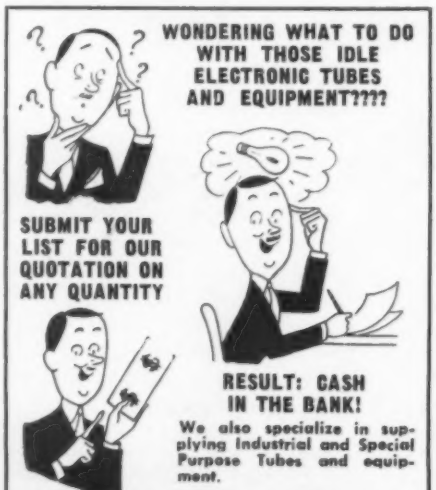
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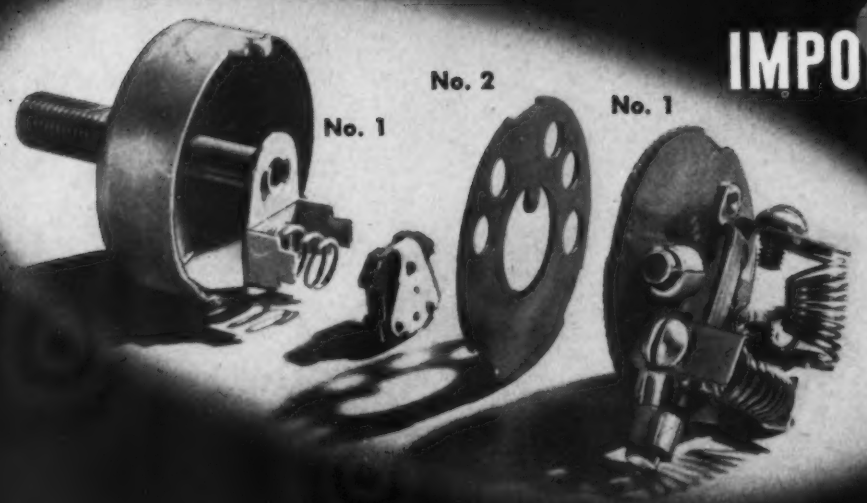
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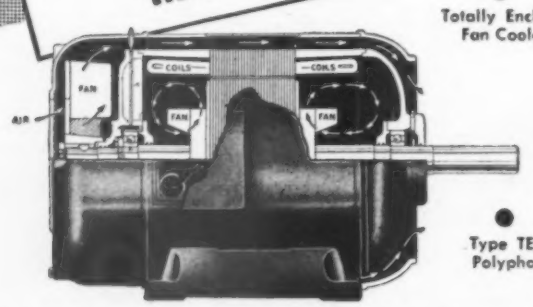
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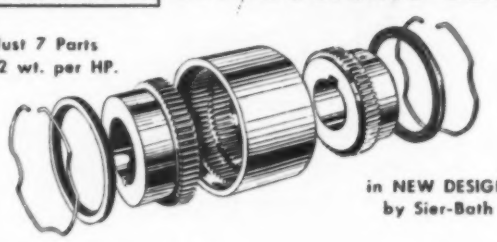

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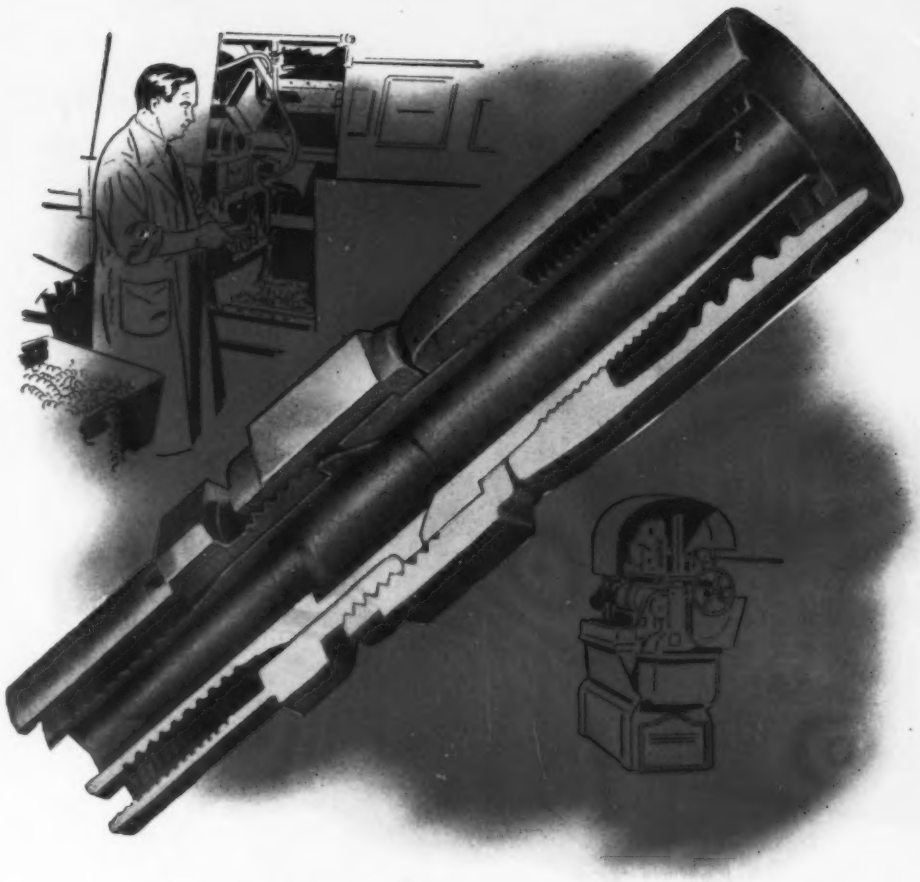
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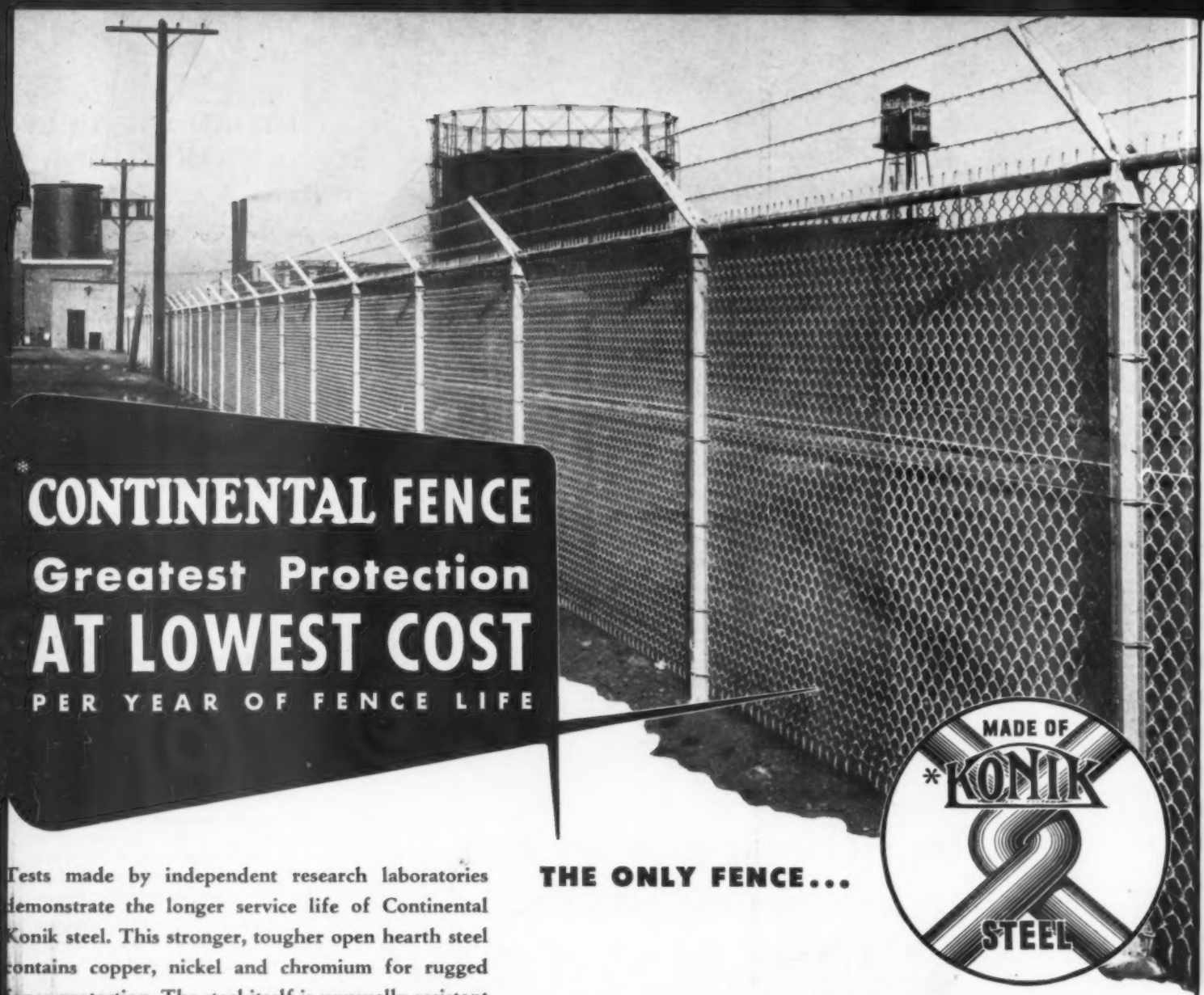
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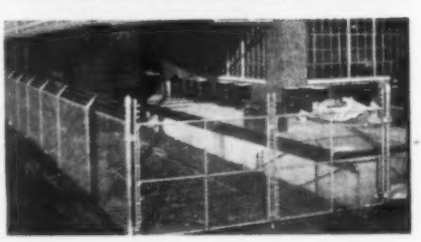

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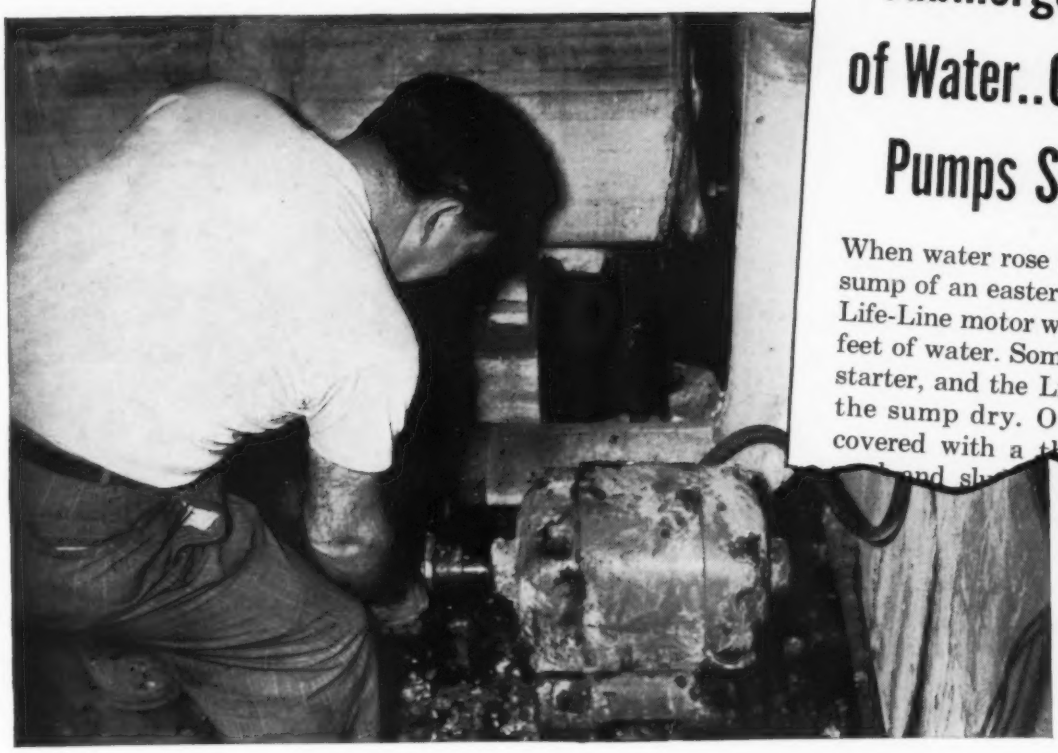
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16

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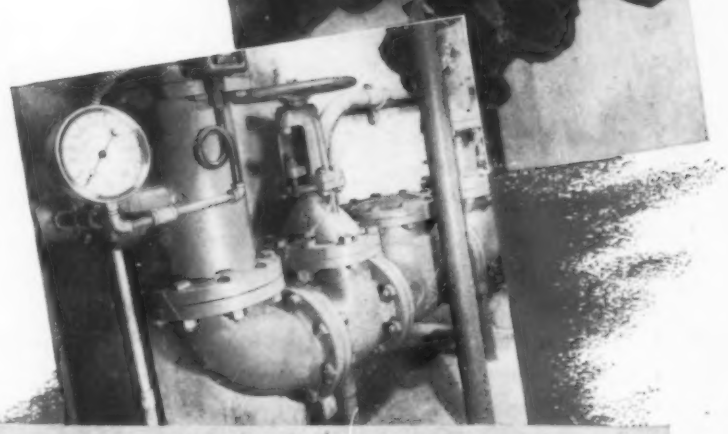

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